

COURSE OUTLINE

CMSY-217

Intermediate Java

3 Credits

HOWARD COMMUNITY COLLEGE

Description

This course builds on the foundations from Introduction to Java and expands the coverage to more advanced topics. Topics include recursion, searching and sorting algorithms, data structures, Java Collections Framework, Generics, multithreading, network programming, JDBC, and Servlets/JSP. The Java 2D API and Swing Toolkit will also be presented. Prerequisite: CMSY-199 (2 hours lecture, 2 hours lab)

Overall Course Objectives

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

1. Demonstrate an understanding of recursion.
2. Demonstrate an understanding of searching and sorting algorithms and be able to determine their efficiency.
3. Use the data structure implementations in the Java Collections Framework.
4. Create and utilize custom data structures such as linked lists, queues, stacks, and binary trees.
5. Write generic methods and classes.
6. Use the Java 2D API to display graphics.
7. Develop GUI applications using the Swing toolkit and handle generated events.
8. Use the Thread class and Runnable interface to write multithreaded code.
9. Write Java networking applications using sockets.
10. Use the JDBC API to access databases.
11. Create dynamic web content using the Servlet/JSP API.

Major Topics

- I. Recursion
- II. Searching and Sorting
- III. Data Structures
- IV. Java Collections Framework
- V. Generics
- VI. Java 2D Graphics API
- VII. Swing Toolkit
- VIII. Multithreading
- IX. Network Programming
- X. Java Database Connectivity (JDBC) API
- XI. Servlets/JavaServer Pages (JSP) API

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member, but will include at least 5 programming projects and two exams.

Other Course Information

This course is a Business elective and an Internet elective.