CIS C155: INTRODUCTION TO JAVA PROGRAMMING

Item	Value
Curriculum Committee Approval Date	04/11/2014
Top Code	070710 - Computer Programming
Units	3 Total Units
Hours	68 Total Hours (Lecture Hours 54; Lab Hours 14)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Students will learn structured programming techniques using Java, one of the most popular programming languages in the world. Hands-on assignments using Java emphasize control structures, procedures, simple data types, file input/output, and a general introduction to the principles of object-oriented programming. This course helps students prepare for careers such as Software Application Developer through the practical application of conditional statements, loops, and functions using the syntax of the Java programming language. ADVISORY: CIS C111. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Given a scenario, write a program in Java that compiles without error, executes, and produces the specified result.
2. Demonstrate use of generic classes, object-oriented principles, recursion and Abstract Data Types.
3. Develop a diagram of user activities that leads to the development of an event-driven program.

Course Objectives

• 1. Demonstrate how to write a structured program using Java syntax.
• 2. Identify the principles of object-oriented programming.
• 3. Outline the activities needed in order to design a diagram leading to event driven programming.

Lecture Content

The Fundamental Tools An Introduction to Computers and Java Expressions and Data Types Variables and Assignment Selection and Decision: if Statements Repetition Arrays and Lists: One Name for Many Data Recursion Principles of Object-Oriented Programming Objects and Classes I: Encapsulation, Strings, and Things Objects and Classes II: Writing Your Own Classes Designing with Classes and Objects Inheritance Polymorphism More Java Classes More Java Classes: The Wrapper Classes and Exceptions Stream I/O and Random Access Files Data Structures and Generics The Java Collections Framework Basic Graphics, GUIs, and Javas Event-Driven Model Graphics: Abstract Windowing Toolkit (AWT) and Swing Event-Driven Programming

Lab Content

Software Installation (Java) Selection and Decisions Repetition Passing Parameters Methods Midterm Project Bubble Sort 2-D Arrays Input Methods Output Methods Code Processing Methods Inheritance Final Project

Method(s) of Instruction

• Lecture (02)
• DE Live Online Lecture (02S)
• DE Online Lecture (02X)
• Lab (04)
• DE Live Online Lab (04S)
• DE Online Lab (04X)

Instructional Techniques

This course will utilize a combination of lecture, hands-on guided laboratory assignments, classroom/discussion forum student interactions, Internet problem solving, quizzes, tests, and programming assignments to achieve the goals and objectives of this course. All instructional methods are consistent across all modalities.

Reading Assignments

Students are required to read the assigned chapters and complete exams, knowledge based assignments, definitions and text-based scenario questions.

Writing Assignments

Writing assignments consist of topics from class activities and forum discussions.

Out-of-class Assignments

Students will write and refine Java code needed for class assignments.

Demonstration of Critical Thinking

Given a scenario, the student will be able to critically analyze the situation and make recommendations on how to improve the operations based on those findings or develop a program to provide an appropriate solution.

Required Writing, Problem Solving, Skills Demonstration

Given a scenario, students will be able to troubleshoot a specific problem, write a detailed outline of the tasks that need to be accomplished to rectify the problem, complete the tasks as outlined, and test to determine if the problem has been solved.

Eligible Disciplines

Computer information systems (computer network installation, microcomputer ...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Computer service technology: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Other Resources

1. IT white papers and articles are available at no charge to all students at multiple sites as recommended by the instructor. Open Educational Resources. 2. Coastline Library