

CIT 149
Java I: Java Fundamentals

Course Description

Students code and execute applications in the Java programming language. Topics include standard control structures in Java applications, methods, arrays, object-oriented programming, and developing graphical user interfaces. Prerequisites: none

Course Competencies

Upon completion of this course, the student can:

1. Demonstrate familiarity with the Java programming language.
2. Code Java programs that:
 - a. Use methods, classes and objects
 - b. Use windows, buttons, and input fields
 - c. Manipulate arrays and strings
3. Utilize reference manuals to resolve technical problems.
4. Execute error-free programs in the Java language, including proper documentation.

Course Outline

- I. Introduction to Java
 - A. History of Java
 - B. Java Class Libraries
 - C. Introduction to Java Programming
- II. Developing Java Applications
 - A. Comments
 - B. Reserved Words
 - C. Statements
 - D. Classes
 - E. Methods
 - F. The main()
- III. Java Applets
 - A. Compiling an Applet
 - B. Creating an HTML File
 - C. Applet Viewer Utility
- IV. Java Programming Elements
 - A. Primitive Data Types
 - B. Variables
 - C. Assignments
 - D. Operators
- V. Control Structures
 - A. Relational and Logical Operators
 - B. Selection
 - C. Repetition

- VI. Methods
 - A. Method Definitions
 - B. Scope
 - C. Recursion
 - D. Method Overloading
- VII. Arrays
 - A. Declaring and Allocating Arrays
 - B. Manipulating Arrays
 - C. Passing Arrays to Methods
- VIII. Object-Based Programming
 - A. Classes
 - B. Class Scope
 - C. Reusability
 - D. Using *this*
 - E. Superclasses and Subclasses
 - F. Protected members
 - G. Constructors and Finalizers
 - H. Composition vs. Inheritance
 - I. Polymorphism
 - J. Type Wrapper Classes
- IX. Strings and Characters
 - A. String Constructors
 - B. String Methods