

Course Description: This course teaches students how to develop Java applications. Topics covered include the Java programming language syntax, OO programming using Java, exception handling, file input/output, threads, collection classes, and networking. Students will develop and test Java applications using Netbeans.

Who Should Attend? This course is designed for applications programmers and designers planning to develop applications using the Java Virtual Machine.

Prerequisites: Students should have taken the Software Development for Non-Programmers course or have programmed in at least one programming language - preferably C or C++. Some familiarity with Object Oriented Programming is desired but not required.

Benefits of Attendance: **Upon completion of this course, students will be able to:**

- Compile and run a Java application.
- Understand the role of the Java Virtual Machine in achieving platform independence.
- Use the Object Oriented paradigm in Java programs.
- Understand the division of classes into Java packages.
- Use Exceptions to handle run time errors.
- Select the proper I/O class among those provided by the JDK.
- Use threads in order to create more efficient Java programs

Course Outline:

Java Basics

- Java – Overview
- Java – Environment Setup
- Java – Basic Syntax
- Java – Object & Classes
- Java – Basic Data types
- Java – Variable Types
- Java – Modifier Types
- Java – Basic Operators
- Java – Loop Control
- Java – Decision Making
- Java – Numbers
- Java – Characters
- Java – Strings
- Java – Arrays
- Java – Date & Time
- Java – Regular Expressions
- Java – Methods
- Java – Files and I/O
- Java – Exceptions
- Java – Serialization
- Java – Networking
- Java – Sending Email
- Java – Multithreading
- Java – Applet Basics

Java Object Oriented

- Java – Inheritance
- Java – Overriding
- Java – Polymorphism
- Java – Abstraction
- Java – Encapsulation
- Java – Interfaces
- Java – Packages

Core Java Advanced Topics

- Java – Data Structures
- Java – Collections
- Java – Generics