JAVA Programming*

COURSE DESCRIPTION:

This introductory-level course presents the understanding of JAVA and how to build a stand-alone application (such as a countdown clock or leap year indicator). This course is designed for first-time learners who have very little programming background except that introduced in Programming I: VB.NET. The student will also learn the techniques of JAVA, how JAVA can be used in cross-platform programming, and the robustness of the JAVA program. At the end of the course students will be able to write basic programs using JAVA and could pursue further instruction in any programming language.

COURSE OBJECTIVES:

After completing this course, students will be able to:

- Understand the evolution of JAVA
- Write basic JAVA programs
- Compile and run their own program
- Understand variables and operator usage in a JAVA program
- Grasp the key concepts of OOPS
- Implement Inheritance in JAVA program
- Handle custom and system errors
- Work with arrays (single, two, multi)
- Use threads in JAVA program
- Understand GUI (Graphic User Interface) using JAVA 1.6
- Handle stings effectively

PREREQUISITES: Programming I – or understanding of version control and general software development, Basic Computer Fundamentals

COURSE LENGTH: One semester

REQUIRED TEXT: JDK 1.5 or higher version

COURSE OUTLINE:

UNIT I: Introducing JAVA

- Introducing JAVA
- Getting Started with JAVA

UNIT II: Micro

- Basic Language Elements
- JAVA Operators
- JAVA Control Statements
- JAVA Access Modifiers
- Unit Exercise

* = One semester (.5 credit) course

JAVA Programming* (continued)

COURSE OUTLINE (continued):

UNIT III: Arrays
- Creating and Using Array
- Programming with Array
- Dynamic Array
- Arraylist
- Searching and Sorting
- Multi-Dimensional Array
- Unit Exercise

UNIT IV: Macro
- Introduction to Classes and Object
- JAVA Constructors
- JAVA Class Inheritance
- JAVA Object Casting
- Abstract Class and Interface
- Overloading and Overriding
- Nesting Classes
- Unit Exercise

UNIT V: String, String Buffer, String Builder
- String Class
- String Buffer Classes
- JAVA String Builder
- Unit Exercise

Unit VI: Exception Handling, Assertions
- JAVA Exception Handling
- Assertions
- JAVA Thread
- Unit Exercise

UNIT VII: GUI Introduction
- GUI Introduction
- Mouse Event, Timer, Keyboard Event
- Layout
- Menu and Layout
- Unit Exercise

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