TOURO COLLEGE

COURSE TITLE: JAVA Programming Language

COURSE NUMBER: MCO 451

DEVELOPER: Department of Academic Computing / Dilfanian

LAST UPDATE: June 1998

CREDITS: 3 Credits

COURSE DESCRIPTION:

This course is brought to us due to the fast pace changes in the Internet that has lead way to this powerful programming language Java. This Programming language promises us to bring complete compatibility amongst all computer platforms, as well as the Web. The goal of this course is to provide the students with a good foundation of Java programming. From the basics of the language to the more advanced topics such as multithreaded applications, network programming and security.

COURSE OBJECTIVES:

- Enables the students to create their very own email account as well as web site.
- Prepares the students for Java programming, by teaching them the fundamentals of HTML scripting.
- Teaches the students the steps and planning required in creating and designing a web site.
- Teaches the students the process in imbedding pictures as well as sound with the use of HTML scripts.
- Reviews with the students the basics of object oriented programming, and teaches them the differences in Java as opposed to other structured languages.
- Teaches them the ability to write, compile and run a Java program as well as an applet.
- Enable the students to have a working knowledge of Java applets.
- The ability to use Graphics, color and Font in their programs.
- Teaches them the use of animation, images and sound.
- How to multithread their programs for optimal performance.
- Enables them to place security both in and around their working environment.

COURSE REQUIREMENTS:

Mid Term Exam
Final Exam
Class Projects
Homework Assignments

ATTENDANCE POLICY:

1. Attendance to all classes is required.
2. Any work missed must be made up.

COURSE TEXT:

Core JAVA 1.1 Volume 1- Fundamentals
By Cay S. Horstmann and Gary Cornell
Publisher: Sun Microsystems Press (Prentice Hall)

CHAPTER ANALYSYS:

1. An Introduction to Java

   a) Java as programming tool
   b) Advantages and Disadvantages of Java
   c) Java and the internet
   d) A Short History of Java
   e) Common Misconception about Java

2. The Java Programming Environment

   a) Installing the Compiler and tools
   b) Navigating the Java Directories
   c) Windows 95/NT as a Programming Environment
   d) Compiling and Running Java Programs
   e) Graphical Applications
   f) Applets and Troubleshooting

3. Fundamental Programming Structures in Java

   a) Simple Java Program
   b) Comments, Data Types, Variables, Assignments, operators, Strings, Control Flow Arrays and Class Methods

4. Objects and Classes

   a) Introduction to Object Oriented Programming
   b) Using Existing Classes
   c) Packages
   d) Class Design Hints

5. Inheritance

   a) First Step With Inheritance
   b) Casting and Abstract Classes
   c) The Class **Class**
   d) Reflection and Protected Access
   e) Design Hints for inheritance

6. Interfaces and Inner Classes

   a) Interfaces
   b) Inner Classes

7. Graphic Programming and Printing

   a) Frames and Windows
   b) Displaying Information in a Window
   c) Events and the Update of Paint Function
   d) Text & Fonts, Color, Drawing Shapes, Filling Shapes, Paint Mode, Images, Buffering , Image Accusation and Printing

8. Event Handling

   a) Create Closeable Frame
   b) Basics of Event Handling
   c) Semantics
   d) Individual, Focus, Window, Keyboard and Mouse Events
   e) Menus
   f) GUI and Application Code
   g) Multicasting
   h) Advanced Event Handling

9. User Interface Components

   a) Canvases, Text Input and Text Areas, Making Choices, Scroll Bars
   b) Layout Management
   c) Border, Flow, Card, Grid, Grid Bag Layouts
   d) Using No Layout Manager or Using a Custom One
   e) Printing Components
   f) Dialog Boxes
   g) Data Exchanges
   h) Lightweight User Interface Elements