Course Title: Core Java

Course Code: CSIT751 Course

Module I: Introduction to Java

Introduction of Java, History of Java, JDK Tools, Class File, Java Bytecode, JVM, identifiers, Data types, Operators. Control Statements, loop, arrays, Inheritance in Java, Multilevel hierarchy, method overriding, Abstract classes, Final classes, Command line arguments.

Module II: Java with Object Oriented Features

Introduction to oops, Classes and Objects, Encapsulation, Abstraction, Polymorphism, Inheritance, A Closer look at Methods and Classes, constructors, types of constructors, method overloading; Inheritance, Single Inheritance, Multilevel hierarchy; Method overriding; Constructors, Various Types of Constructors, Role of Constructors in inheritance, Abstract classes; final; static; super; Garbage Collection

Module III: Exception Handling Interface and Thread in Java

Exception handling in Java, try, catch, throw, throws and finally, Uncaught Exceptions, creating and using user defined exception, Multiple catch, Java's Built-in Exception, Interface: Defining Interfaces, Abstract Methods in Interfaces, Implementing Interfaces, Extending Interfaces, Interface References, Default Methods in Interfaces, Static Methods in Interfaces, Constants in Interfaces, Thread: Thread life cycle, Creating and implementing thread, multi-threaded programming, thread priorities, synchronization of thread, resuming and stopping Threads

Module IV: Java Packages and GUI

Defining, Implementing and applying Packages, Importing Packages, Types of packages, User define package, Introduction to lang Package classes; Introduction to IO package – input streams, output streams, Sample programs on I/O files; string handling Applet Class, Life cycle of applet, creating an executable applet, adding applet to HTML file, The Graphics class, Draw lines, rectangles, circles, ellipse, arcs, polygon etc. Using control loops in Applet.

Module V: Event Driven Programming and Database Programming using JDBC

AWT- Introduction to AWT, Event handling Mechanism, Event Model, Event Classes, Sources of Events, Event Listener Interfaces, working with Windows, AWT Controls; Layout Manager; Introduction to swing classes and controls; Advantages of swings over AWT; Basics, networking classes and interfaces, using java.net package, doing TCP/IP and Datagram Programming; JDBC

Architecture, Connection interface, Java database connectivity, introduction to package java. SQL. *, working with SQL statements