

## **JAVA PROGRAMMING**

**Course Code: CSE 403****Credit Units: 03****Total Hours: 30****Course Objective:**

The objective is to impart programming skills used in this object oriented language java. The course explores all the basic concepts of core java programming. The students are expected to learn it enough so that they can develop the web solutions like creating applets etc.

**Course Contents:****Module I : (7 Hours)**

Object Oriented Programming: Concept and features of object-oriented programming, create classes and objects and add methods to a class, Real World Comparison. Evolution of JAVA: History of Java, Requirements and Environment (JDK), Comparison with other languages, Basic Features & Java Architecture-Java Virtual Machine (JVM), Installing Java Development Kit, Program Structure- Data types, Variables and Operators. Arrays

**Module II : (7 Hours)**

Classes and Objects in Java: Understanding Constructors, Dealing with Garbage Collection. Working with Inheritance in Java: Understanding Abstract Classes and Interfaces. Packages: Introduction to packages, How to implement a package, CLASSPATH Setting for Packages, Types and understanding packages.

**Module III : (6 Hours)**

Multithreaded Programming: Basic concepts and needs of multi-threading, Life Cycle of a Thread, How to create a thread, Handling Thread Priorities, Enforcing Thread Synchronization, Maintaining Inter-thread Communication. Exception Handling: The Idea behind Exception, Exceptions & Errors, Types of Exception, Control Flow in Exceptions, Use of try, catch, finally, throw, throws in Exception Handling.

**Module IV : (7 Hours)**

GUI Programming -Introduction to AWT, Window Fundamentals, Working with Graphics, Using AWT Controls and Menus, Understanding Layout Managers. JFC and Swing - A Higher Level of User Interaction, Features of the Java Foundation Classes, Overview of Swing, Components and Containers, Swing Packages, Exploring Swing components ,Generating Swing Application

**Module V : (3 Hours)**

Event Handling -The Delegation Event Model, Event Classes, Event Listener Interfaces Handling Various Events.

**Course Outcomes:**

The student will learn:

- Students can perform object oriented programming solution and develop solutions to problems demonstrating usage of control structure, modularity, classes, I/O and the scope of the class members
- Students can demonstrate adeptness of object oriented programming in developing solution to problems demonstrating usage of data abstraction, encapsulation and inheritance
- Students can demonstrate ability to implement one or more patterns involving dynamic binding and utilization of polymorphism in the solution of problems
- Students can demonstrate ability to implement multithreading in the programming.
- To learn syntax and features of exception handling
- Students can demonstrate the ability to implement solution to various I/O manipulation operations and the ability to create two-dimensional graphic components using Swings.
- To demonstrate the ability to handle Events in the Programming

**Examination Scheme:**

Components	A	CT	S/V/Q/HA	ESE
Weightage (%)	5	15	10	70

A: Attendance, CT: Class Test, S/V/Q/HA: Seminar/Viva/Quiz/ Home Assignment, ESE: End Semester Examination;

**Text & References:****Text:**

- JAVA The Complete Reference by Patrick Naughton & Herbert Schild, TMH
- Introduction to JAVA Programming a primer, Balaguruswamy.

**References:**

- “Introduction to JAVA Programming” Daniel/Young PHI
- Jeff Frentzen and Sobotka, “Java Script” , Tata McGraw Hill,1999