II Year I Semester	**L**	**T**	**P**	**C**
Code: 17CS304	**4**	**1**	**0**	**3**

JAVA PROGRAMMING

Course Learning Objectives:

1. Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.
2. This course introduces computer programming using the JAVA programming language with object-oriented programming principles.
3. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using Java for network level programming and middleware development.

Course Outcomes:

Upon successful completion of this course the students will be able to

1. Understand Java programming concepts and utilize Java Graphical User Interface in Program writing.
2. Write, compile, execute and troubleshoot Java programming for networking concepts.
3. Build Java Application for distributed environment.
4. Design and Develop multi-tier applications.
5. Identify and Analyze Enterprise applications.

SYLLABUS

UNIT I:

Introduction to OOP:

Procedural Programming language and object oriented language, principles of OOP, applications of OOP, history of java, java features, JVM, program structure. Variables, primitive data types, identifiers, literals, operators, expressions, precedence rules and associativity, primitive type conversion and casting, flow of control.

UNIT II:

Classes and Objects:

class declaration, creating objects, methods, constructors and constructor overloading, garbage collector, importance of static keyword and examples, this keyword, arrays, command line arguments, nested classes.

UNIT III:

Inheritance:

Types of inheritance, super keyword, final keyword, overriding and abstract class. Interfaces, creating the packages, using packages, importance of CLASSPATH and java.lang package. Exception handling, importance of try, catch, throw, throws and finally block, user defined exceptions, Assertions.

UNIT IV:

Multithreading:

Introduction, thread life cycle, creation of threads, thread priorities, thread synchronization, communication between threads. Reading data from files and writing data to files, random access file.

UNIT V:

Applet Class:

Applet structure, Applet life cycle, sample Applet programs. Event handling event delegation model, sources of event, Event Listeners, adapter classes, inner classes.

UNIT VI:

Introduction to AWT:

Introduction, components and containers, Button, Label, Checkbox, Radio Buttons, List Boxes, Choice Boxes, Container class, Layouts, Menu and Scrollbar.

TEXT BOOKS:

1. The complete Reference Java, 8th edition by Herbert Schildt, TMH.
2. Programming in JAVA by Sachin Malhotra, SaurabhChoudary, Oxford.

REFERENCE BOOKS:

1. Introduction to java programming by Y Daniel Liang,7th edition Pearson Education .
2. Beginning Java by Ivor Horton, 7th edition byWrox publications
3. Programming with Java A Premier by E.BalaguruSwamy, 4th edition, McGrawhill