II B. Tech – II Semester

(20ES4009) OBJECT ORIENTED PROGRAMMING THROUGH JAVA

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
30	70	100	3	-	-	3

Pre-Requisites:

Course Objectives:

This course is designed to:

- Study the basic concepts and functions of operating systems
- Understand the concepts of classes and objects and AWT
- Learn classifications of inheritance
- Introduce Identifying and rectifying errors using exceptions
- Study the basic concepts of Collections
- Emphasize the concepts of AWT

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. Collections: Collections Hierarchy; List – Array List, Linked List; Sets – Hash Set, Tree Set, Linked Hash Set; Queue; Maps – Hash Map, Tree Map, Linked Hash Map; Iterable, Iterator;

UNIT-V:

Event handling: event delegation model, sources of event, Event Listeners, adapter classes, inner classes. AWT: introduction, components and containers, Button, Label, Checkbox, Radio Buttons, List Boxes, Choice Boxes, Container class, Layouts, Menu and Scrollbar.

Course Outcomes:

A student who successfully fulfills this course requirement will be able to:

S. No	Course Outcome	BTL
CO1	Define object oriented programming	L2
CO2	Describe classes and objects	L2
CO3	Describe the concept of inheritance	L2
CO4	Demonstrate multithreading and event handling	L3
CO5	Demonstrate components and containers of Java	L3

Correlation of Cos with POs & PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	3	3	2	3	3	3	1	1	2	1	2	2
CO2	2	2	3	3	2	2	0	1	1	1	2	1	2	2
CO3	2	2	2	3	2	3	1	2	2	1	3	1	3	2
CO4	2	0	3	3	3	0	1	3	1	3	1	1	3	2
CO5	3	3	3	3	2	2	1	3	1	3	1	0	3	2

Text Books:

1. The complete Reference Java, 8th edition, Herbert Schildt, TMH.
2. Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford.
3. Introduction to java programming, 7th edition by Y Daniel Liang, Pearson.

Reference Books:

1. Dietal & Dietal, Java: How to Program, 8th Edition, PHI, 2010
2. C. S. Horstmann and G. Cornell, Core Java, Vol 1. Fundamentals, 7th Edition, Pearson Education, 2004
3. C. Horstmann, BIG JAVA Compatible with Java 5 & 6, 3rd Edition, Wiley Publishers, 2008