

III B.Tech – II Semester
(17CS604) OOPS THROUGH JAVA

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
40	60	100	4	1	-	3

Pre-Requisites: C Programming

Course Objectives:

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

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, userdefined 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: Collections: Collections Hierarchy; List - ArrayList, LinkedList; Sets - HashSet, TreeSet, LinkedHashSet; Queue; Maps - HashMap, TreeMap, LinkedHashMap; Iterable, Iterator; Dictionary, Hashtable

UNIT-VI: Applet: Applet class, Applet structure, Applet life cycle, sample Applet programs. 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:

After successful completion of the course, the students can be able to:

S. No	Course Outcome	BTL
1.	Understand the object-oriented concepts and java features	L1
2.	Identifying classes and objects in various applications	L2
3.	Implementing the concepts of inheritance, packages and exceptions	L3
4.	Implementing multithreading using threads concept in java	L3
5.	Develop various java programs using Applet	L4
6.	Develop various java programs using AWT components	L4

Correlation of COs with POs & PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	1	2	1	2	2	-	-	-	-	-	1	2	1	2
CO 2	1	2	3	2	2	-	-	-	-	-	1	2	1	2
CO 3	1	2	3	2	2	-	-	-	-	-	1	2	1	2
CO 4	1	2	3	2	2	-	-	-	-	-	1	2	1	2
CO 5	1	2	3	2	2	-	-	-	-	-	1	2	1	2
CO 6	1	2	3	2	2	-	-	-	-	-	1	2	1	2

Text Books:

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