ADVANCED JAVA PROGRAMMING

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per Sem	Per week	Per Sem	Per week	Per Sem	
V		Core Theory -7	6	90	6	90	0	0	4

COURSE OBJECTIVES

- This course is to provide the ability to design console based, GUI based and web based applications in Java.
- Students will also be able to understand integrated development environment to create, debug and run multi-tier and enterprise-level applications in Java.

COURSE OUTCOMES

On successful completion of the course, students will be able to

CO Number	CO statement	Knowledge Level (K1-K4)
CO1	Understand the basic concepts of Java in OOPs	**K1**
CO2	Handling the Exception , communication etween threads and Applets	**K2**
CO3	Designing the patterns and analyze different types of classes.	**K3**
CO4	Specify appropriate drivers for the database connectivity in JDBC	**K3**
CO5	Analyzing different types of Client side technologies	**K4**

Knowledge level: K1 – Remember; K2 – Understand; K3 – Apply; K4 –Analyze.

MAPPING WITH PROGRAMME OUTCOMES

COS	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO1	M	L	L	S	S	S
CO2	S	S	S	M	M	S
CO3	M	S	S	M	M	S
CO4	M	S	S	M	L	M
CO5	M	M	S	M	M	S

S- Strong; ***M – Medium;*** ***L-Low***

SYLLABUS

UNIT-I INTRODUCTION TO JAVA **15 Hrs**

Introduction to Java – Features of Java - Data Types – Variables - Arrays
- Operators - Control Statements –Console I/O

OOPS IN JAVA

Class and Methods -Classes - Objects - Constructors - Overloading - Method - Access Control - String Class - Inheritance – Overriding methods - Using super - Abstract class

UNIT-II PACKAGES , THREADS **16 Hrs**

Packages - Access Protection - Importing Packages - Interfaces - Exception Handling - Thread - Synchronization – Runnable Interface -Inter thread Communication

APPLET AND AWT

Applet Class – AWT Controls - Label - Textbox - List box - Combo box - Check box - Radio button - Menus - Frame - Dialog box - Tab control - Working With Graphics - Layout Manager

UNIT-III DESIGN PATTERNS **20 Hrs**

Introduction to Design patterns - Catalogue for Design Pattern - Factory Method - Pattern - Prototype Pattern - Singleton Pattern - Adapter Pattern - Proxy Pattern - Decorator Pattern - Command Pattern - Template Pattern - Mediator Pattern - A Simple Servlets - The Servlet API – Servlet Package - Handling HTTP - Request and Response.

UNIT-IV JDBC **20 Hrs**

JDBC - Introduction - JDBC Architecture - JDBC Classes and Interfaces – Database Access with MySQL - Steps in Developing JDBC application - Creating a New Database and Table with JDBC - Working with Database Metadata

JAVA NETWORKING

Java Networking - Basics of Networking - Networking in Java- Socket Program using TCP/IP
- Socket Program using UDP- URL and Internet address classes.

UNIT-V CLIENT-SIDE PROGRAMMING **19 Hrs**

Client-side programming technologies – Form design using HTML, XHTML and DHTML and CSS – Client side validation Using Java Script – Content Structuring using XML – Adding Interactivity with AJAX – Query Framework Server-side Programming - Web Servers - Handling request and response - Handling Form data.

Distribution of Marks :Theory 75% and Problems 25%

TEXT BOOKS

S. NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1	C. Muthu	Programming in Java	TMH	1986
2	Herbert Schildt	The Complete reference JAVA 2	Tata MCGraw Hill	2005

REFERENCE BOOKS

S. NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1	Patrick Naughton& Herbert Schildt	The Complete Reference: Java 2	Tata McGraw Hill	1999
2	S.Sagayaraj,R.Den is, P.Karthik D.Gajalakshmi,	Java Programming	Universities Press	2017
3	Cay S. Horstmann	Core Java	Prentice hall	2018

4	Charlie Hunt, Binu John	Java Performance	Pearson Education	2011
5	Joshua Bloch	Effective Java	Pearson Education	2008
6	Uttam Roy	Advanced Java Programming	Oxford University Press	2008
7	Mike McMillan	Advanced Java Programming	O'Reilly Media	2012
8	Cay S. Horstmann and Gary Cornell	Core Java, Volume II-- Advanced Features	Pearson Education	2000

WEB SOURCES

1. http://leetcode.com/
2. https://www.coursera.org/

TEACHING METHODOLOGY

- Class room teaching.
- Group discussions
- Seminars
- Demo using systems
- Chart/Assignment
- Simulation Model
- Smart Class room

SYLLABUS DESIGNERS

1. Mrs. G.Sangeetha Lakshmi, Assistant Professor and Head, Dept of Computer Applications.
2. Mrs. B.Arulmozhi , Assistant Professor and Head, Department of Computer Science
3. Mrs. K. Ayesha, Assistant Professor, Department of Computer Science