Program	BACHELOR OF VOCATION (B.Voc.)	**Semester - 4**
Type of Course	-	
Prerequisite		
Rationale	-	
Effective From A.Y.	2025-26	

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
Lecture	Tutorial	Lab	Credit	SEE T	IAT	SEE P	CCE	
3	0	0	3	50	-	-	-	50

***SEE** - Semester End Examination, **IAT** - Internal Assessment Test, **CCE** - Continues & Comprehensive Evaluation*

Course Content

T - Teaching Hours | **W** - Weightage

Sr.	Topics	T	W
1	**Module 1** **Java Packages:** Introduction to Packages - package in Java, Advantages of packages (Types of Packages - Built-in packages (e.g., java.lang, java.util, java.io, etc.) and User-defined packages **I/O Programming:** File Handling, Java I/O streams, File class, reading files, writing files.	5	20
2	**Module 2** **Java Networking:** Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, ServerSocket, InetAddress, URL, URLConnection	9	20
3	**Module 3** **JDBC Programming:** Introduction to JDBC (Java Database Connectivity), JDBC Architecture, JDBC Drivers, JDBC Programming, Database Connectivity Using JDBC, CRUD Operations Using JDBC	9	20
4	**Module 4** **Servlet API and Overview:** Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure, Cookies and Session Management: Understanding state and session, Understanding Session Timeout and Session Tracking	11	20
5	**Module 5** **Java Server Pages:** The Problem with Servlets, Life Cycle of JSP Page, JSP Processing, JSP Elements, JSP Directives, JSP Action, JSP Implicit Objects, JSP Form Processing. **Hibernate, Spring Bot, and Microservices:** Overview of Hibernate, Hibernate Architecture, Hibernate Mapping Types, Hibernate O/R Mapping, Java Web Frameworks - Spring MVC Overview of Spring, Spring Architecture, bean life cycle.	11	20
	Total	45	100

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy				
Level	Remembrance	Understanding	Application	Analyze
Weightage	20	40	30	10

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes

At the end of this course, students will be able to:	
CO1	**To Understand** the purpose of packages in Java
CO2	**To Understand** the concept of java networking
CO3	**To Implement** Database connectivity in Java for given applications
CO4	**To Implement** a webpage with dynamic content and server side web application using Servlet
CO5	**To Use** JSP elements effectively to build dynamic web pages

Reference Books

1.	**Black Book JAVA Server Programming J2EE** By Kathy Walrath | Dream Tech Publishers | 1st
2.	**Complete Reference J2EE** By James Keogh | McGraw Publication
3.	**Professional JAVA Server Programming** By Subrahmanyam Allamaraju, Cedric Buest | Wiley Publication
4.	**SCWCD** By Matthew Scarpino, Hanumant Deshmukh, Jignesh Malavie | Manning Publication
5.	**Core Java, Volume II: Advanced Features** By Cay Horstmann and Gary Cornell | Pearson Publication
6.	**JAVA Persistence with Hibernate** By Christian Bauer, Gavin King
7.	**Spring in Action** By Craig walls | Manning Publication | 3rd
8.	**Hibernate** By Jeff Linwood and Dave Minter, | Beginning Après publication | 2nd
9.	**Java Server Faces in Action** By Kito D. Mann | Manning Publication
10.	**JDBC API Tutorial and Reference** By Maydene Fisher, Jon Ellis, Jonathan Bruce | Addison Wesley | 3rd
11.	**Beginning JSP, JSF and Tomcat** By Giulio Zambon | Apress
12.	**JSF 2.0 CookBook** By Anghel Leonard | PACKT publication