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				
Lecture	**Tutorial**	**Lab**	**Credit**	**Theory Marks**		**Practical Marks**		**Total Marks**
				SEE T	**IAT**	**SEE P**	**CCE**	
0	0	2	1	-	-	30	20	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	**Practical 1** 1. Write a program to access a class from another package 2. Demonstrate the use of built-in packages (java.util, java.io, etc.)		2	5
2	**Practical 2** Create a package containing multiple classes and access them		2	5
3	**Practical 3** 1. Write a program to create a new file using the File class 2. Write a program to write data into a file using FileWriter		2	5
4	**Practical 4** Write a program to read data from a file using FileReader/BufferedReader		4	5
5	**Practical 5** Implement TCP Server for transferring files using Socket and ServerSocket		4	20
6	**Practical 6** Implement student registration form with enrollment number, first name, last name, semester, contact number. Store the details in the database. Also implement search, delete and modify facilities for student records		4	20
7	**Practical 7** Write a Servlet program to print system date and time		4	10
8	**Practical 8** Create a Servlet file and study web descriptor files		4	10
9	**Practical 9**		2	10

Course Content

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

Sr.	Topics	T	W
	Write a program that shows the usage of JSP Scriptlets, Expressions & Declarations		
10	Practical 10	2	10
	Write a program that shows Reading Form Data in JSP		
	Total	30	100

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

Laboratory work will be based on above syllabus with minimum required experiments/exercises to be incorporated.