Program	BACHELOR OF VOCATION (B.Voc.)	**Semester - 2**
Type of Course	-	
Prerequisite		
Rationale	-	
Effective From A.Y.	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Marks		Practical Marks		
Lecture	**Tutorial**	**Lab**	**Credit**	**SEE T**	**IAT**	**SEE P**	**CCE**	**Total Marks**
-	-	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** Install JDK, write a simple “Hello World” or similar java program, compilation, debugging, executing using java compiler and interpreter.	4	
2	**Practical 2** a. Write a program in Java to find that given number or string is palindrome or not. b. Write an interactive program to print a string entered in a pyramid form.	2	
3	**Practical 3** Create a class which ask the user to enter a sentence, and it should display count of each vowel type in the sentence. The program should continue till user enters a word “quit”. Display the total count of each vowel for all sentences.	2	
4	**Practical 4** a. Write programs in Java to use Wrapper class of each primitive data types b. Write a program in Java to develop overloaded constructor.	4	
5	**Practical 5** Create a class to find out whether the given year is leap year or not. (Use inheritance for this program)	2	
6	**Practical 6** Write a program in Java to develop user defined exception for 'Divide by Zero' error	2	
7	**Practical 7** Write a program in Java to demonstrate use of this keyword. Check whether this can access the private members of the class or not.	2	
8	**Practical 8** Describe abstract class called Shape which has three subclasses say Triangle, Rectangle, Circle. Define one method area()in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle etc. Same for Rectangle and Circle	4	
9	**Practical 9**	4	

Course Content

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

Sr.	Topics	T	W
	a. Write a program that executes two threads. One thread displays “Thread1” every 2,000 milliseconds, and the other displays “Thread2” every 4,000 milliseconds. Create the threads by extending the Thread class. b. Write a program in Java to demonstrate multiple try block and multiple catch exception.		
10	**Practical 10** a. Write a program to create “Hello Students” Applet. b. Create Number counter in an Applet using Thread Example	**4**	
	Total	**30**	

Course Outcomes

At the end of this course, students will be able to:	
CO1	Understand object oriented programming concepts and implement in java.
CO2	Comprehend building blocks of OOPs language and inheritance
CO3	Understand interface and packages in Java
CO4	Implement multithreading in object oriented programs
CO5	Understand the concept of Applets

Reference Books

1.	**Java Fundamentals A comprehensive introduction (TextBook)** By Herbert Schildt, Dale Skrien | McGraw Hill Education.
2.	**Programming with Java A Primer (TextBook)** By E. Balagurusamy | Mc Grawhill
3.	**Object Oriented Systems with Java, (TextBook)** By Tanweer Alam | Khanna Publishing House
4.	**Core Java (TextBook)** By Tanweer Alam | Khanna Publishing House

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