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
Lecture	**Tutorial**	**Lab**	**Credit**	**SEE T**	**IAT**	**SEE P**	**CCE**	**Marks**
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** Study of PROLOG.	2	7
2	**Practical 2** Write a Prolog Program for: a. Find Factorial of a given number. b. To perform union and intersection of two lists. c. To solve tower of Hanoi problem using recursion.	4	13
3	**Practical 3** Write a program to solve N-Queens problem using Prolog.	2	7
4	**Practical 4** Write a program to implement Tic-Tac-Toe game problem using Prolog.	2	7
5	**Practical 5** Write a program to implement BFS for missionaries and cannibals Problem using Prolog.	2	7
6	**Practical 6** Write a program to implement DFS for Water Jug Problem using Prolog.	2	7
7	**Practical 7** Write a program to implement Best First Search for 8-Puzzle Problem using Prolog.	4	13
8	**Practical 8** Solve Robot (traversal) problem using means End Analysis using Prolog.	4	13
9	**Practical 9**	4	13

Course Content

T - Teaching Hours | W - Weightage

Sr.	Topics	T	W
	Write a program to solve travelling salesman problem using Prolog.		
10	Practical 10	4	13
	Write a program to solve Monkey Banana problem using Prolog.		
	Total	30	100

Course Outcomes

At the end of this course, students will be able to:

CO1	**Understand** Prolog syntax and basic programming concepts.
CO2	**Apply** recursion and list processing in Prolog programs.
CO3	**Apply** uninformed search techniques (BFS, DFS) to solve AI problems.
CO4	**Implement** game playing and constraint satisfaction problems in Prolog.
CO5	**Apply** heuristic and advanced problem-solving techniques in AI applications.

Reference Books

1.	**Artificial Intelligence** By Saroj Kaushik | Cengage Learning | 1st, Pub. Year 2011
2.	**Practical Workbook Artificial Intelligence and Soft Computing for Beginners** By Anindita Das Bhattacharjee | Shroff Publisher-X team Publisher
3.	**Python Machine Learning by Example** By Yuxi (Hayden) Liu | Packet Publishing Limited, Pub. Year 2007
4.	**Machine Learning** By Tom Mitchell | McGraw Hill, Pub. Year 2017
5.	**Pattern Recognition and Machine Learning** By Christopher M. Bishop | Springer, Pub. Year 2011
6.	**The Elements of Statistical Learning** By T. Hastie, R. Tibshirani, J. Friedman | 2e, Pub. Year 2011

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