



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	
3	-	-	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	<p>Introduction to AI & Intelligent Agent</p> <p>Introduction to Artificial Intelligence: Basics of Artificial Intelligence, History, Types, Features, Application, Advantages, Disadvantages, Challenges & Future of AI</p> <p>Introduction to Intelligent Agent: Basics of Agent, PEAS representation model, Types of AI agents, Agent Environment in AI, Turing Test in AI</p>	9	20
2	<p>Knowledge Representation & Predicate Logic</p> <p>Knowledge Representation: Definition and importance of knowledge, Knowledge representation, Various approaches used in knowledge representation, Issues in knowledge representation. Using Predicate Logic: Representing Simple Facts in logic, representing instances and is-a relationship, Computable function and predicate.</p>	8	20
3	<p>Search Algorithms & Hill Climbing algorithm</p> <p>Introduction to Search Algorithms: What is search algorithms, Property of search algorithm, Uniformed Search (Breadth-first Search, Depth-first Search, Depth-limited Search), Informed search Algorithm (Best-first search, A*search)</p> <p>Hill Climbing algorithm in AI: Concept of Hill Climbing Algorithm, Features of Hill Climbing Algorithm, State Space diagram of Hill Climbing, Simple Hill Climbing Algorithm</p>	10	20
4	<p>Natural language processing & Expert Systems</p> <p>Natural language processing: Introduction syntactic processing, Semantic processing, Discourse and pragmatic processing.</p> <p>Expert Systems: An Introduction to Expert System, Explanation Facilities, Expert System, Developments Process, knowledge Acquisition</p>	9	20
5	Introduction to Prolog	9	20



Course Content		T - Teaching Hours W - Weightage	
Sr.	Topics	T	W
	Introduction to Prolog: Introduction to Prolog: Syntax and Numeric Function, Basic List Manipulation Functions in Prolog, Functions, Predicates and Conditional, Input, Output and Local Variables, Iteration and Recursion, Property Lists and Arrays, LISP and Other AI Programming Language		
Total		45	100

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

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	Understand the fundamental concepts of Artificial Intelligence and Intelligent Agents.
CO2	Apply knowledge representation methods and predicate logic in AI problems.
CO3	Apply various AI search algorithms to solve problem-solving tasks efficiently.
CO4	Understand the basic concepts of Natural Language Processing and Expert Systems.
CO5	Apply basic programming concepts of Prolog 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