VIKASH INSTITUTE OF TECHNOLOGY, BARGARH

LESSON PLAN

Semester:6th	**Year: 3rd year**	**Course: B.Tech**
Branch : Civil,Mech,EEE	**Sub: AI&ML**	**Total Credit:03**
	Sub Code :	
Name of the Faculty:	**Monali Patel**	
Designation :	**Asst Prof**	
Department :	**CSE**	
Session	**2024-25**	
Recommended Books	**Text book**:	
	1 Elaine Rich, Kevin Knight, & Shivashankar B Nair, Artificial Intelligence, McGraw Hill,3rd ed.,2009	
	2 Stuart Russell, Peter Norvig, Artificial Intelligence -A Modern Approach, 4/e, Pearson, 2003.	
	Reference Books:	
	1 Nils J Nilsson, Artificial Intelligence: A New Synthesis, Morgan Kaufmann Publications,2000	

Sl. No.	Lecture No.	Topics to be covered	No. of Classes
		MODULE-1	
1	Lecture-01	The Foundations of Artificial Intelligence	**11**
2	Lecture-02	INTELLIGENT AGENTS, Agents and Environments	
3	Lecture-03	Good Behavior: The Concept of Rationality	
4	Lecture-04	Nature of Environments, the Structure of Agent	
5	Lecture-05	SOLVING PROBLEMS BY SEARCH	
6	Lecture-06	Problem-Solving Agents, Formulating problems	
7	Lecture-07	Searching for Solutions	
8	Lecture-08	Uninformed Search Strategies	
9	Lecture-09	Breadth-first search(BFS), Depth-first search(DFS), Searching with Partial Information	
10	Lecture-10	Informed (Heuristic) Search Strategies, Greedy best-first search	
11	Lecture-11	A*, Search, CSP, Means-End-Analysis.	
		MODULE-2	
12	Lecture-12	ADVERSARIAL SEARCH – Games	**11**
13	Lecture-13	The Mini-Max algorithm, Optimal decisions in multiplayer games	
14	Lecture-14	Alpha-Beta Pruning, Evaluation functions, Cutting off search	
15	Lecture-15	LOGICAL AGENTS – Knowledge-Based agents	
16	Lecture-16	Logic, Propositional Logic	
17	Lecture-17	Reasoning Patterns in Propositional Logic	
18	Lecture-18	Forward and Backward chaining	
19	Lecture-19	FIRST ORDER LOGIC – Syntax and Semantics of First-Order Logic	
20	Lecture-20	Using First-Order Logic , Knowledge Engineering in First- Order Logic	
21	Lecture-21	INFERENCE IN FIRST ORDER LOGIC – Propositional vs. First- Order Inference	
22	Lecture-22	Unification and Lifting	
		MODULE-3	
19	Lecture-19	UNCERTAINTY – Acting under Uncertainty, Basic Probability Notation	**8**
20	Lecture-20	The Axioms of Probability, Inference Using Full Joint Distributions	
21	Lecture-21	Independence, Bayes' Rule and its Use, PROBABILISTIC REASONING	
22	Lecture-22	Representing Knowledge in an Uncertain Domain	
23	Lecture-23	The Semantics of Bayesian Networks	
24	Lecture-24	Efficient Representation of Conditional Distribution	

25	Lecture-25	Exact Inference in Bayesian Networks	
26	Lecture-26	Approximate Inference in Bayesian Networks	
MODULE-4			
27	Lecture-27	LEARNING METHODS – Statistical Learning, Learning with Complete Data	**8**
28	Lecture-28	Learning with Hidden Variables, Rote Learning	
29	Lecture-29	Learning by Taking Advice, Learning in Problem-solving	
30	Lecture-30	Learning from Examples: Induction, Explanation-based Learning	
31	Lecture-31	Discovery, Analogy, Formal Learning Theory	
32	Lecture-32	Neural Net Learning and Genetic Learning	
33	Lecture-33	Expert Systems: Representing and Using Domain Knowledge	
34	Lecture-34	Expert System Shells, Explanation, Knowledge Acquisition	

Signature of Faculty Member **Signature of HOD**

PRINCIPAL