Panipat Institute of Engineering & Technology
Department of CSE-AI&DS
LESSON PLAN

Subject: Introduction to Artificial Intelligence **Subject code:** PC-CS-AIDS- 207A
Session: Aug.- Dec 2023-24 **Semester:** 3rd sem

S.No	Topic	CO Covered	Assignment No.	Teaching Methodology
1	**Scope of AI**: Games, theorem proving, natural language processing.	CO1	1	Whiteboard
2	Vision and speech processing, robotics.	CO2		Whiteboard
3	Expert systems, AI techniques-search knowledge, abstraction.	CO1		Smart board
4	**Problem Solving (Blind):** State space search; production systems, search space control	CO4	1	Smart board
5	Depth first search, breadth-first search. Heuristic Based Search: Heuristic search,	CO5	1	Whiteboard
6	Hill climbing, best-first search, branch and bound	CO2	1	Smart board
7	Problem Reduction, Constraint Satisfaction End, Means-End Analysis.	CO4	1	Smart board
8	**Game Playing:** Game Tree, Minimax Algorithm,	CO6	1	Whiteboard
9	Alpha Beta Cutoff, Modified Minimax Algorithm	CO2	1	Whiteboard
10	Horizon Effect, Futility Cut-off. Knowledge Representation	CO1	1	Smart board
11	Predicate Logic: Unification, Modus Ponens, Modus Tolens	CO4	2	Whiteboard
12	Resolution in Predicate Logic, Conflict Resolution Forward Chaining, Backward Chaining,	CO3	2	Smart board
13	Declarative and Procedural Representation, Rule based Systems.	CO2	2	Smart board
14	Structured Knowledge Representation: Semantic Nets: Slots,	CO6	2	Whiteboard
15	Exceptions and default frames, conceptual dependency, scripts.	CO4	2	Smart board
16	Knowledge Engineering: First order logic, Syntax and semantics for first order logic	CO3	2	Smart board
17	Inference in First order logic – prepositional versus first order logic	CO2	2	Whiteboard

18	Unification and lifting, forward chaining, backward chaining, Resolution, Knowledge representation	CO1	2	Smart board
19	**Handling Uncertainty**: Non-Monotonic Reasoning, Probabilistic reasoning	CO5	3	Whiteboard
20	Use of certainty factors, fuzzy logic.	CO3	3	Smart board
21	**Natural Language Processing:** Introduction, Syntactic Processing	CO2	3	Smart board
22	Semantic Processing, Pragmatic Processing.	CO1	3	Whiteboard
23	**LEARNING PRINCIPLES:** Learning from observations, forms of learning	CO4	3	Whiteboard
24	Inductive learning, Learning decision trees,	CO6	3	Whiteboard
25	Ensemble learning, Knowledge in learning, Logical formulation of learning	CO5	3	Presentation
26	Explanation base learning, Learning using relevant information,	CO4	4	Whiteboard
27	Inductive logic programming, Statistical learning methods, Learning with complete data	CO3	4	Whiteboard
28	Learning with hidden variable**,** genetic algorithm,	CO2	4	Presentation
29	learning by inductions, neural networks.	CO1	4	Presentation
30	**Expert Systems:** Need and justification for expert systems, knowledge acquisition	CO6	4	Whiteboard
31	Case Studies: MYCIN, RI	CO5	4	Whiteboard