	DPG Institute of Technology and Management **Sector 34, Gurugram HR 122004**	
	Lesson Plan	
	Course Name: B. TECH (AIML)	
	Faculty Name: Archana Rohilla (Assistant Professor)	

No. of Lecture Hours/Week		Exam Hours	3
Total No. of Lecture Hours		Exam Marks	75
Course Code:	PCC-CSE-304G	SEMESTER	3rd

Course Objectives:

1. To provide historical perspective of AI and its foundation.
2. To provide the most fundamental knowledge to the students so that they become familiar with basic principles of AI towards problem solving, inference, knowledge representation and learning.
3. Explore application of AI techniques in Expert systems, Neural Networks.
4. Explore the current trends, potential, limitations, and implications of AI.

Lecture No.	Topics to be covered	Teaching Methodology	Class Activity/ Event	Remark /CO
SECTION A	**Introduction**			CO1
1	Definition of AI, History of AI	PPT	Assignment-1	
2	nature of AI problems, examples of AI problems	Chalk &Talk		
3	Problem solving by search: Uninformed Search: Depth First Search (DFS), Breadth First Search (BFS)	Chalk &Talk		
4	Informed Search: Best First Search, A*. Local Search: Hill Climbing	Chalk &Talk		
5	Problem Reduction Search: AO*. Population Based Search: Ant Colony Optimization, Genetic Algorithm	SMART BOARD		
6	Game Playing: Min Max Algorithm, Alpha-Beta Pruning	Chalk &Talk	Game playing	
SECTION B	Knowledge Representation			CO2
7	Types of Knowledge, Knowledge Representation Techniques/schemes	Chalk &Talk		
8	Propositional Logic, Predicate Logic	Chalk &Talk		
9	Semantic nets, Frames. Knowledge representation issues	SMART BOARD		
10	Rule based systems	Chalk &Talk		

SECTION C	Reasoning under Uncertainty			CO3
11	Basics of Probability Theory, Probabilistic Reasoning	Chalk &Talk		
12	Bayesian Reasoning, Dempster-Shafer Theory	Chalk &Talk		
13	Planning: Introduction to Planning	Chalk &Talk		
14	Representation of Planning, Partial-order Planning	Chalk &Talk		
SECTION D	Learning			CO4
15	Introduction to Learning	Chalk &Talk		
16	Types of Learning: Learning by Induction, Rote Learning, Symbol Based Learning	Chalk &Talk		
17	Identification Trees, Explanation Based Learning, Transformational Analogy	Chalk &Talk		
18	Introduction to Neural Networks	PPT		
19	Expert Systems, Current trends in Artificial Intelligence	PPT	Assignment-2	

Assessment Methods: -

S.No.	Evaluation Component	Assessment Method	Marks
1	**Internal Marks**		**25**
		Attendance	5
2		**Quiz/Presentation**	5
3		**Assignment**	5
4		**Avg of Sessional 1&2**	10
5	**External Marks**	**Final University Exam**	**75**

Suggested Text / Reference Books

1. Artificial Intelligence: A Modern Approach Third Edition
2. Stuart Russell and Peter Norvig, 2010, Pearson Education.
3. Elaine Rich, Kevin Knight, & Shivashankar B Nair, Artificial Intelligence, McGraw Hill, 3rd ed.,2009.
4. Introduction to Artificial Intelligence & Expert Systems, Dan W Patterson, PHI.,2010.
5. Artificial intelligence, Patrick Henry Winston, 1992, Addition Wesley 3 Ed.

Course Outcomes:

At the end of the course, the student will be able:

CO 1	Display the understanding of the historical perspective of AI and its foundation.
CO 2	Apply basic principles of AI in solutions that require problem solving, inference, knowledge representation and learning.
CO 3	Demonstrate fundamental understanding of various application of AI techniques in Expert systems, Neural Networks.
CO 4	Demonstrate an ability to share in discussion of AI, it's the current trends, limitations, and implications of AI.