MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.)

A Govt. Added UGC Autonomous and NAAC Accredited Institute, Affiliated to R.G.P.V, Bhopal
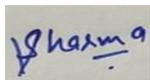
DEPARTMENT OF ELECTRONICS ENGINEERING

Multiple Mode Teaching Learning Pattern

Name of Course with Code: AI & ML		Class: B. Tech. III Year	Session: January- June 2023	
S. No.	**Unit**	**Content to be Covered**	**Teaching Session**	**Mode**
1.	Unit 1	Definition, Goals of AI, Task of AI	1	Offline & Open discussions
2.		Computation, Psychology and Cognitive Science. Perception, Understanding, and Action	2	Offline & Open discussions
3.		Artificial intelligence vs machine learning vs deep learning and other related fields	3-4	Offline & Open discussions
4.		Applications of Artificial intelligence and Machine Learning in the real world.	5-6	Online & demonstration based learning
5.	Unit 2	Production System	7	Offline & problem solving based learning
6.		Blind Search: BFS & DFS	8	Offline & problem solving based learning
7.		Heuristic Search, Hill Climbing	9	Offline & problem solving based learning
8.		Best First Search	10	Offline & Open discussions
9.		History, Biological Neuron	11	Online & demonstration based learning
10.		Artificial Neural Network, Neural Network Architectures	12-13	Offline & problem solving based learning
11.		Classification, & Clustering	14-15	Offline & Experiment with problem solving in group based learning
12.	Unit 3	Traditional Programming vs Machine learning	16	Offline & Open discussions
13.		Key Elements of Machine Learning: Representation, process (Data Collection, Data Preparation, Model selection, Model Training, Model Evaluation and Prediction)	17-19	Online & demonstration based learning
14.		Evaluation and Optimization	20	Offline & Onsite/ field visit based Learning
15.		Types of Learning: Supervised, Unsupervised and reinforcement learning	21-22	Online & demonstration based learning

16.		Regression vs classification problems	23	Offline & Onsite/ field visit based Learning
17.		Linear regression: implementation, applications & performance parameters	24	Offline & activity based learning
18.		Decision tree classifier, terminology, classification vs regression trees, tree creation with Gini index and information gain	25-26	Offline & activity based learning
19.	Unit 4	IDE3 algorithms, applications and performance parameters	27-28	Offline & Open discussions
20.		Random forest classifier	29	Offline & activity based learning
21.		Case study on regression and classification for solving real world problems	30	Online & demonstration based learning
22.		Unsupervised Machine Learning: Introduction, types	31	Offline & Open discussions
23.		Partitioning, density based, DBSCAN	32	Offline & activity based learning
24.		distribution model-based, hierarchical	33	Offline & Open discussions
25.		Agglomerative and Divisive, Common Distance measures	34-35	Offline & Experiment with problem solving in group based learning
26.	Unit 5	K-means clustering algorithm	36	Offline & Open discussions
27.		Case study on clustering for solving real world problems	37	Offline & Onsite/ field visit based Learning

Online	Offline						
	Black Board Teaching	Group based Learning	Learning through projects	Learning through demonstration	Learning through experimentation	Activity based Learning	Onsite/field based learning
21.6%	24.32%	10.8%	10.8%	21.6%	10%	13.5%	8.1%

Dr. Varun Sharma