



**BONAM VENKATA CHALAMAYYA INSTITUTE OF
TECHNOLOGY AND SCIENCE (A) :: BATLAPALEM, Andhra
Pradesh, India**

**MCA Course Structure & Syllabus
(Applicable for batches admitted from 2025-2026)**

**MCA II Semester
Course code : 25MC2T10**

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ARTIFICIAL INTELLIGENCE

Course Objectives:

- To learn the basic State space representation. Intelligent Systems Categorization of Intelligent concepts and techniques of AI and machine learning
- To explore the various mechanisms of Knowledge and Reasoning used for building an expert system.
- To become familiar with supervised and unsupervised learning models
- To design and develop AI and machine learning solutions using modern tools.

UNIT-I

Introduction to AI: Definition, Problem, System, Components of AI Program, Foundations of AI, Applications of AI, Current trends in AI, Intelligent Agents: Anatomy, structure, Types.

UNIT-II

Problem solving- Solving problems by Searching: Problem Solving Agent, Formulating Problems. Uninformed Search Methods: Breadth First Search (BFS), Depth First Search (DFS), Depth First Iterative Deepening (DFID), Informed Search Methods-Greedy best first Search, A* Search, Memory bounded heuristic Search. Local Search Algorithms and Optimization Problems- Hill climbing search Simulated annealing and local beam search.

UNIT -III

Knowledge and Reasoning-Knowledge based Agents, The Wumpus World, and Propositional logic. First Order Logic -Syntax and Semantic, Inference in FOL, Forward chaining, backward Chaining, Knowledge Engineering in First-Order Logic, Unification and Resolution

UNIT-IV

Agents: Definition of agents, Agent architectures (e.g., reactive, layered, cognitive), Multiagent systems- Collaborating agents, Competitive agents, Swarm systems and biologically inspired models. Expert Systems: Representing and Using Domain Knowledge, Expert System Shells, Explanation, Knowledge Acquisition

University Nominee Dr.Suneetha Eluri		Alumni Member Mr.HariSuresh Polisetti	
SubjectExpert:1 Dr. B Kezia Rani		Chairman Mr. AVS M Ganesh	
SubjectExpert:2 Dr.SuneelKumarDuvvuri		Member Mr. G L N V S Kumar	
Representative From Industry Mr.SaiKrishna Narima		Member	



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UNIT-V

Expert Systems: Architecture of expert systems, Roles of expert systems, Knowledge Acquisition, Meta knowledge, Heuristics. Expert systems- MYCIN, DART, XOON, Expert systems shells..

Text Books:

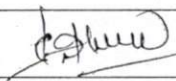
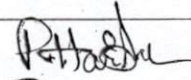
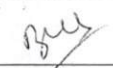
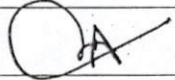
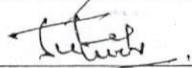
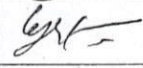
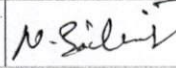
1. Artificial Intelligence, Sarojkaushik, Cengage Learning India, 2011
2. Artificial Intelligence and Machine Learning, Vinod Chandra S.S., Anand Hareendran S
3. Stuart J.Russell and Peter Norvig, "Artificial Intelligence: A Modern Approach" Second Edition, Pearson.

Reference Books:

1. Ivan Bratko "PROLOG Programming for Artificial Intelligence", Pearson Education, Third Edition.
2. Elaine Rich and Kevin Knight "Artificial Intelligence ", Third Edition
3. Han Kamber, "Data Mining Concepts and Techniques", Morgan Kaufmann Publishers
4. G. Luger, W. A. Stubblefield, "Artificial Intelligence", Third Edition, AddisonWesley Longman, 1998

Web Resources:

1. https://onlinecourses.nptel.ac.in/noc22_cs56/preview
2. <https://openlearning.mit.edu/news/explore-world-artificial-intelligence-onlinecourses-mit>
3. <https://cse.iitk.ac.in/users/cs365/2015/resources.html>
4. <https://microsoft.github.io/AI-For-Beginners/>
5. <https://artint.info/3e/resources/index.html>
6. <https://web.dev/explore/ai>

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