RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Artificial Intelligence and Data Science, III-Semester

AD 304 Artificial Intelligence

1. Fundamental of Artificial Intelligence, history, motivation and need of AI, Production systems, Characteristics of production systems , goals and contribution of AI to modern technology, search space, different search techniques: hill Climbing, Best first Search, heuristic search algorithm, A* and AO* search techniques etc.

2. Knowledge Representation, Problems in representing knowledge, knowledge representation using propositional and predicate logic, comparison of propositional and predicate logic, Resolution, refutation, deduction, theorem proving, inferencing, monotonic and non-monotonic reasoning.

3. Probabilistic reasoning, Baye's theorem, semantic networks, scripts, schemas, frames, conceptual dependency, forward and backward reasoning.

4. Game playing techniques like minimax procedure, alpha-beta cut-offs etc, planning, Study of the block world problem in robotics, Introduction to understanding, natural language processing (NLP), Components of NLP, application of NLP to design expert systems.

5. Expert systems (ES) and its Characteristics, requirements of ES, components and capability of expert systems, Inference Engine Forward & backward Chaining, Expert Systems Limitation, Expert System Development Environment, technology, Benefits of Expert Systems.

TEXT BOOKS:

1. Russel,S., and Norvig,P., “Artificial Intelligence: A Modern Approach”, 4th Edition, 2020, Pearson.
2. Elaine Rich, Kevin Knight,Shivashankar B. Nair, “Artificial Intelligence”, McGraw-Hill International.
3. Nils J. Nilsson, “Artificial Intelligence: A New Synthesis”, Morgan-Kauffman.

REFERENCE BOOKS:

1. Janakiraman, K.Sarukesi, ‘Foundations of Artificial Intelligence and Expert Systems’, Macmillan Series in Computer Science.
2. W. Patterson, ‘Introduction to Artificial Intelligence and Expert Systems’, Prentice Hall of India.