

Semester	6
Course	MAJOR
Paper Code	
Paper Title	ARTIFICIAL INTELLIGENCE
No. of Credits	4
Theory / Practical / Composite	COMPOSITE
Minimum No. of preparatory hours per week a student has to devote	5
Number of Modules	ONE
Syllabus	Introduction to Artificial Intelligence, Background and Applications, Turing Test State Space search, Production Systems, formulating the state-space; un-informed search: breadth first search, depth first Search Problem characteristics and applications, Informed Search: Use of heuristics; Heuristic Search Techniques: Generate and Test, hill climbing, Best first search, A* algorithm, Problem Reduction, AO* algorithm, Constraint Satisfaction Problem, Means-End Analysis. Game Playing: Minimax and game trees, refining minimax, Alpha – Beta pruning Knowledge Representation: First Order Predicate Logic, Resolution Principle, Unification; Semantic Net Introduction to Agent Based Systems. Ethical and Social Implications of AI
Learning Outcomes	On completion of this course, the students will be able to: 1. define and understand the various applications of Artificial intelligence. 2. design various applications of agent-based systems including multiagents and intelligent agents. 3. apply various heuristic search techniques to their relevant application areas. 4. understand the various forms of knowledge representation. 5. identify the various techniques of reasoning for uncertain knowledge.

Reading/Reference Lists	1. S. Russell and P. Norvig, Artificial Intelligence: A Modern Approach, Pearson Education, 2006. 2. Elaine Rich and Kelvin Knight, Artificial Intelligence, Tata McGraw Hill, 2002. 3. Nils J Nilson, Artificial Intelligence: A New Synthesis, Morgan Kaufmann Publishers, Inc., San Francisco, California, 2000. 4. R. Akerkar, Introduction to Artificial Intelligence, Prentice-Hall of India, 2005 5. Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems, Prentice Hall of India, 2006. 6. Nils J. Nilson, Principles of Artificial Intelligence, Narosa Publishing House, 2001 7. W.F. Clocksin and C.S. Mellish, Programming in PROLOG, Narosa Publishing House, 2002. 8. Ivan Bratko, Prolog Programming for Artificial Intelligence, Pearson, 2018.	
Evaluation	Theory CIA: 12 Attendance: 3 Semester Exam: 45	Practical CA: 38 Attendance: 2
Paper Structure	Answer 3 out of 5 of 15 marks each	