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| 13CS4102 | - | ARTIFICIAL INTELLIGENCE |

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| Hours / Week | : | 4 |  | Sessional Marks | : | 40 |
| Credits | : | 4 |  | End Examination Marks | : | 60 |

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| **UNIT - I** |
| **Introduction**: A.I, History of A.I, The state of the Art, Intelligent Agents: Agents and Environments, Good behavior, The nature of Environments, the Structure of Agents. |
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| **UNIT – II** |
| **Problem Solving**: Problem solving agents, toy problems, Real-world problems, searching for solutions, **Uninformed Search strategies**: BFS, DFS, Depth-limited search, **Informed Search strategies**: GBFS, A\* search, Local search algorithms: Hill-climbing. |
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| **UNIT – III** |
| **Constraint Satisfaction Problems**: Constraint Satisfaction Problems, Backtracking Search for CSPs, Local search for CSPs, The structure of the problem, **Adversarial Search**: Games, optimal decision in games, Alpha-Beta pruning, Imperfect, Real-Time Decisions, Games that include an Element of Chance, State-of-the-Art Game Programs. |
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| **UNIT – IV** |
| **Knowledge and reasoning**: Logical Agents: Knowledge -based Agents, The WUMPUS world, Logic, Propositional Logic, Reasoning Patterns in Propositional logic, Resolution, Forward and Backward chaining. First-order Logic: Syntax and Semantics of First-Order Logic, Using FOL- Assertions and queries in FOL. |
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| **UNIT – V** |
| **Learning**: Learning from Observations- Forms of Learning, Inductive Learning, Learning Decision Trees, Ensemble Learning, **Knowledge in Learning**: A Logical formulation of learning, knowledge in learning, Explanation-Based Learning, Learning using Relevance Information. |
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| TEXT BOOKS |
| 1. Artificial Intelligence- A Modern Approach, Stuart Russell, Peter Norvig (Person Education) ,2nd edition.
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| REFERENCE BOOKS |
| 1. Artificial Intelligence- Rich E & Knight K (TMH), 4th edition.
2. Artificial Intelligence Structures and Strategies complex problem Solving – George F. Lugar Pearson Education.
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