SEMESTER IV

ARTIFICIAL INTELLIGENCE (AI)

CREDITS:	3

OBJECTIVE:

- Learners will be learning the fundamentals of artificial intelligence.
- Provide Learners will opportunities to explore the latest topics in artificial intelligence.

UNIT I - INTRODUCTION **9**

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

UNIT II - PROBLEM SOLVING METHODS **9**

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations – Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing – Optimal Decisions in Games – Alpha - Beta Pruning - Stochastic Games.

UNIT III - KNOWLEDGE REPRESENTATION **9**

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories -Reasoning with Default Information.

UNIT IV - SOFTWARE AGENTS **9**

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining –Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V - APPLICATIONS **9**

AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing - Machine Translation – Speech Recognition – Robot – Hardware –Perception – Planning – Moving.

TOTAL: 45 PERIODS

OUTCOME:

- Learners will understand the purpose of artificial intelligence.
- Be convenant will the methods used in artificial intelligence.

REFERENCES

1. Kevin Night and Elaine Rich, Nair B., “Artificial Intelligence (SIE)”, Mc Graw Hill-2008
2. Dan W. Patterson, “Introduction to AI and ES”, Pearson Education, 2007
3. Deepak Khemani, A First Course in Artificial Intelligence, McGraw Hill Education (India), 2013.