**Artificial Intelligence**

**Credits: 4** **Semester: V**

**Subject Code: DS21504** **No. of Lecture Hours: 60**

**Objectives**: To introduce basic aspects of Artificial intelligence, utilizing and analyse AI techniques for identifying optimal solutions to search strategies.

**Outcomes:**

**CO1:** Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.

**CO2:** Understand predicate logic and transform the real life information in different representation.

**CO3:** Understand formal methods of knowledge representation

**CO4:** Analyse the underlying mathematical relationships and build expert system

**CO5:** Demonstrate Knowledge representation techniques

**UNIT-I**

**Introduction**

**12 Hrs**

1. Introduction to AI
1

2. applications of AI
2

3. History of AI
2

4. Types of AI, Intelligent agents
2

5. Types of agents
2

6. Agent environment
2

7. Turing test in AI
1

**UNIT-II**

**12 Hrs**

**Search Algorithms - Types of Search Algorithms**

1. Uninformed Search –Breadth First Search, Uniform Cost Search
3

2. Depth First Search, and Depth Limited Search
3

3. Iterative Deepening Depth First Search, Bidirectional Search
3

4. Informed search -Best first search, A* search
3

**UNIT-III**
**12 Hrs**

**Adversarial search – Types of Games in AI**

1. MIN –MAX Algorithm and its Working
6

2. Alpha Beta Pruning and its Working
6

**UNIT-IV**
**12 Hrs**

**Knowledge Representation:**

1. Knowledge Base Agents
2

2. Knowledge Representation Techniques
2

3. The Wumpus World
2

4. Propositional Logic
2

5. First Order Logic
2

6. Forward Chaining and Backward Chaining
2

**UNIT-V**
**12 Hrs**

**Subset of AI:**

1. Expert systems
3