

Subject Code	Subject Name	Credits
26CS606	ARTIFICIAL INTELLIGENCE	4

Course Objectives

1. To understand the basics of Artificial Intelligence
2. To get to know about Software Agent

Learning Outcomes

After the completion of the course, the graduate will be able to

1. To familiarize with problem solving methods in AI

Unit 1 - Introduction to artificial Intelligence (12 Hrs.)

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

Unit 2 - Problem Solving Methods (12 Hrs.)

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 3 - Knowledge Representation (12 Hrs.)

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 4 - Software Agents (12 Hrs.)

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

Unit 5 - AI Applications (12 Hrs.)

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

References:

1. S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.
2. I. Bratko, —Prolog: Programming for Artificial Intelligence, Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.
3. Gerhard Weiss, —Multi Agent Systems, Second Edition, MIT Press, 2013.