

CORE COURSE XIII - Artificial Intelligence

Unit I

Artificial Intelligence definitions – AI techniques – AI applications – Problems – Problem space and search – Defining the problem as a state space search – Production systems – Problem characteristics.

Unit II

Heuristic search – Generate and test – Hill climbing – Breadth first search – Best first search – Problem reduction – Constraint Satisfaction – Means ends analysis.

Unit III

Game playing – Minimax search – Adding alpha – beta cutoffs – Predicate logic – Representing simple facts and logic computable functions and predicates – Resolution – Natural deduction.

Unit IV

Representing knowledge using rules – Procedural versus declarative knowledge – Forward versus backward reasoning – Non-monotonic reasoning.

Unit V

Expert Systems – Structure – Components – Expert system development process – Expert system development tools.

Text Books :

1. Artificial Intelligence by Elaine Rich and Kevin Knight, Tata McGraw Hill, Second Edition.
2. Principles of Artificial Intelligence and Expert Systems development by David Rolston, McGraw Hill.
3. Artificial Intelligence and Expert Systems by K.Meena and R.Dhanapal, International books, 2000.