Programme Name	Bachelor of Technology in Computer Engineering	Semester – V
Course Code	CO3002S	
Course Title	Artificial Intelligence	
Prerequisites	Mathematics	

COURSE OUTCOMES

1. Describe the key aspects of intelligent agents.
2. Apply artificial intelligence techniques, including search heuristics, knowledge representation, planning and reasoning.
3. Solve problems by applying a suitable search method.
4. Compare minimax search and alpha-beta pruning in game playing.
5. Differentiate the key aspects of evolutionary computation, including genetic algorithms and genetic programming.

Course Contents
Introduction
Overview and historical perspective, turing test, physical symbol systems and the scope of symbolic AI, Agents.
State Space Search
Depth First Search, Breadth first Search, DFID.
Heuristic Search
Best First Search, Hill Climbing, Beam Search, Tabu Search.
Randomized Search
Simulated annealing, Genetic Algorithms, Ant colony optimization.
Finding Optimal Paths
Branch and Bound, A*, IDA*, Divide and Conquer approaches, Beam Stack Search.
Problem Decomposition
Goal Trees, AO*, Rule Based Systems, Rete Net.
Game Playing
Minimax Algorithm, AlphaBeta Algorithm,SSS*.
Planning and Constraint Satisfaction
Domains, Forward and Backward Search, Goal Stack Planning, Plan Space Planning, Constraint Propagation.

Logic and Inferences

Propositional Logic, First Order Logic, Soundness and Completeness, Forward and Backward chaining.

Text Books

1. Deepak Khemani,"A First Course in Artificial Intelligence", McGraw Hill Education(India), 2013.
2. Stuart Russell, Peter Norvig,"Artificial Intelligence A Modern Approach", Prentice Hall, 3rd Edition,2009.

Reference Books

1. Stefan EdelKamp and Stefan Schroedl, "Heuristic Search: Theory and Application", Morgan Kaufmann, 2011.
2. Zbigniew Michalewicz and David B. Fogel, " How to Solve it: Modern Heuristics", Springer, 2nd Edition, 2004.