Course Code:	C	A	P	D	4	0	2	Course Title :	**ARTIFICIAL INTELLIGENCE**

WEIGHTAGE	
CA	**ETE (Th.)**
20	**80**

COURSE CONTENTS:

Sr. No.	Topics
1.	**Tools required to understand the course:** PROLOG, The programming language **Introduction and Overview**: Meaning of AI, Historical foundations, development of logic, Turing test, Applications of AI, AI & related fields
2.	**Problems, Problem Spaces & Search**: Problems & state Space Search, Production Systems – BFS, DFS & DFS with iterative deepening, Problem & Production System characteristics, Design of Search Programs.
3.	**Heuristic search** – Generate & Test, Hill Climbing, Best First Search, Problem reduction, Constraint Satisfaction, Means-End Analysis
4.	**Knowledge Representation**: General concepts of knowledge, Approaches & issues in knowledge representation, Propositional and predicate logic to represent knowledge, resolution, Natural Deduction
5.	**Knowledge Representation**: Procedural vs Declarative Knowledge, Logic Programming, Forward vs backward Reasoning, matching & Control Knowledge
6.	**Symbolic Reasoning Under uncertainty** - Nonmonotonic reasoning, Augmenting a Problem solver
7.	**Statistical reasoning** - Probability & Bayes Theorem, Rule based Systems, Bayesian N/W, Dampster Shafer theory, Fuzzy logic, Overview of weak slot and filler structures & strong slot and filler structures
8.	**Natural Language Processing** – Meaning, Syntactic Processing, Semantic Analysis, Discourse & Pragmatic processing
9.	**Learning**: Meaning, Rote Learning, Various Type of Learning, discovery, Formal learning Theory, Neural Net & Genetic Learning
10.	**Other Advance Topics of AI**: Game Playing, Expert Systems & its architecture, Understanding & Common Sense, Pattern recognition.

TEXT BOOK:

Rich, Knight, "Artificial Intelligence", Tata McGraw Hill, Seventh Edition

ADDITIONAL READINGS:

1. D.W.Patterson, Introduction to AI & Expert Systems, Prentice Hall, 1990
2. P. H.Winston:, “Artificial Intelligence”
3. N.J.Nilsson, Principles of Artificial Intelligence, Kaufmann, 1980
4. Charnmiak & M. Dermalt, Introduction to AI , Addison Wesley, 1985.
5. A.J. Gongalez & D.D. Dankel, The Engineering of Knowledge based systems theory & practice, Prentice Hall, 1993.
6. G.F.Lager & W.A. Stubblefield, Artificial Intelligence and the design of Expert System , Benjamin Kummings, 1989.