Name of Department:- Computer Science and Engineering

1. Subject Code: TCS 706 Course Title: **Artificial Intelligence**
2. Contact Hours: L: 3 T: - P: -
3. Semester: VII

4. Pre-requisite:Basics of mathematics and database are required

5. Course Outcomes: After completion of the course students will be able to

1. Understand the basics of the theory and practice of Artificial Intelligence.
2. Learn the basics of Artificial Intelligence programming.
3. Understand various searching techniques use to solve the AI problems.
4. Apply knowledge representation techniques and problem solving strategies to common AI applications.
5. Build self-learning and research skills to tackle a topic of interest on his/her own or as part of a team.
6. Apply the knowledge of AI and agents in developing multidisciplinary real world projects

6. Detailed Syllabus

UNIT	CONTENTS	Contact Hrs
Unit - I	**Introduction**Introduction to Artificial Intelligence, Simulation of sophisticated & Intelligent Behavior indifferent area, problem solving in games, natural language, automated reasoning visualperception, heuristic algorithm versus solution guaranteed algorithms.	**10**
Unit - II	**Understanding Natural Languages** Parsing techniques, context free and transformational grammars, transition nets, augmentedtransition nets, Fillmore's grammars, Shanks Conceptual Dependency, grammar free analyzers, sentence generation, and translation.	**9**
Unit – III	**Knowledge Representation** First order predicate calculus, Horn Clauses, Introduction to PROLOG, Semantic NetsPartitioned Nets, Minskey frames, Case Grammar Theory, Production Rules KnowledgeBase, The Inference System, Forward & Backward Deduction	**10**
Unit – IV	**Expert System** Existing Systems (DENDRAL, MYCIN), domain exploration, Meta Knowledge, Expertise Transfer, Self Explaining System	**9**
Unit – V	**Pattern Recognition** Introduction to pattern Recognition, Structured Description, Symbolic Description, Machineperception, Line Finding, Interception, Semantic, & Model, Object Identification, SpeechRecognition. **Programming Language:** Introduction to programming Language, LISP, PROLOG	**8**
	Total	**46**

Text/ Reference Books:

1. Charnick "Introduction to Artificial Intelligence." Addision Wesley.
2. Rich & Knight, "Artificial Intelligence".TMH
3. Winston, "LISP", Addison Wesley.
4. Marcellous, "Expert Systems Programming", PHI.