



C. U. SHAH UNIVERSITY, WADHWAN CITY.

Faculty of: **Computer Science**
 Course: **Master of Computer Applications**
 Semester: **III**
 Subject Code: **5CS03CAI1 (Elective – I)**
 Subject Name: **Artificial Intelligence**

Sr. No	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								Total
			Th	Tu	Pr			Theory				Practical				
								Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
								Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
1	5CS03CAI1	Artificial Intelligence	4	--	--	4	4	30	1½	70	2½	--	--	--	--	100

Objectives:

- Objective of this course is to teach concept of artificial intelligence using logic concept and natural language processing and intelligence agents.

Prerequisite:

- Basic knowledge of OOP programming and mathematics.

Course Outline:

Sr. No.	Course Content	Hrs.
1	Introduction to AI What is AI? Foundation of AI and its applications. Problem solving: Production system, State space search, Heuristics search-Branch and bound search, Hill Climbing, Breadth First Search.	10
2	Knowledge Representation and Logic Concept Knowledge representation scheme: Semantic networks, Frames, Script, Proposition and predicate logic, Rule based system. Logic concept: logical study of valid and sound arguments, Non-logical operators, syntax of propositional logic, Semantics/Meaning in propositional logic, Interpretations of formulas, Validity and inconsistency of propositions, Equivalent forms in the prepositional logic (PL), Normal forms, syntax of first order predicate logic, Prenex normal form (PNF), (skolem) standard form, application of FOPL.	10

	Natural Language Processing	
3	Sentence analysis – Morphological, syntactical, semantic, pragmatic and discourse analysis, Decision Tree, State machines, Grammars and parsers, top down parsing, bottom up parsing.	10
	Expert system and intelligent agents	
4	Expert system: Expert system architecture, expert system shells, Example of expert system. Intelligent Agents: Classification of agents, working of an agent, Task environment of agents (PEAS), structure of agents.	10
	Fuzzy systems	
5	Fuzzy systems: Fuzzy system, Relation of Fuzzy sets, Operations on Fuzzy sets, Operations unique to fuzzy sets.	8
	TOTAL	48

Books Recommended:

1. Artificial Intelligence by Saroj Kaushik, Cengage Learning.
2. Introduction to artificial intelligence and expert systems by Dan W, Patterson, PHI.
3. Artificial intelligence for games Ian Millington, Morgan kaufmann, publishers.

Reference Books:

1. Artificial intelligence by Elaine Rich, Kevin knight Cengage Learning.
2. Artificial Intelligence – A modern approach by Stuart Russell, peter norvig, Pearson.