ARTIFICIAL INTELLIGENCE

Course Code	23CS4501B	Year	III	Semester	I
Course Category	Professional Elective-I	Branch	CSE	Course Type	Elective (Theory)
Credits	3	L – T – P	3-0-0	Prerequisites	Linear algebra, data structures and algorithms, and probability
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Understand the basic concepts of Artificial Intelligence.	L2
CO2	Apply the principles of AI in solutions that require problem solving, knowledge representation.	L3
CO3	Apply Learning for solving AI problems.	L3
CO4	Analyze a given problem and apply AI Techniques.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3													
CO2	2								1	1				
CO3													2	
CO4		3							1	1		1		
Avg.	**2.5**	**3**							**1**	**1**		1	**2**	

Syllabus

Unit No.	CONTENTS	Mapped CO
I	**Introduction**: AI problems, Intelligent agents: Agents and Environments, the concept of rationality, the nature of environments, structure of agents.	**CO1,CO4**
II	**Searching-** Well-defined problems and solutions, Searching for solutions, uniformed search strategies – Breadth first search, depth first Search. Informed (Heuristic) Search Strategies: Greedy best-first search, A* search , AO* Algorithms, Alpha-Beta pruning.	**CO1,CO2, CO4**

III	**Representation of Knowledge:** Knowledge based agents,The Wumpus World, logic, Propositional logic, Reasoning Patterns in Propositional logic.	**CO1,CO2, CO4**
IV	**Logic concepts:** Formal languages and their ontological and epistemological commitments. Syntax and semantics of first-order logic, Using First order Logic, Inference in first order logic, propositional vs. first order inference, unification & lifts forward chaining, Backward chaining, Resolution, Learning from observation Inductive learning, Decision trees, Explanation based learning, Statistical Learning methods,	**CO1,CO4**
V	Learning: Forms of Learning , Inductive Learning, Learning decision trees-Decision trees as performance elements, Expressiveness of decision trees.	**CO1,CO3, CO4**

Learning Resources
Text Books
1. S. Russel and P. Norvig, "Artificial Intelligence – A Modern Approach", SecondEdition, Pearson Education. 2. Kevin Night and Elaine Rich, Nair B., "Artificial Intelligence (SIE)", Mc Graw Hill
Reference Books
1. David Poole, Alan Mackworth, Randy Goebel,"Computational Intelligence: a logical approach", Oxford University Press. 2. G. Luger, "Artificial Intelligence: Structures and Strategies for complex problemsolving", Fourth Edition, Pearson Education. 3. J. Nilsson, "Artificial Intelligence: A new Synthesis", Elsevier Publishers. 4. Artificial Intelligence, SarojKaushik, CENGAGE Learning.
E-Resources & other digital material
1. https://ai.google/ 2. https://swayam.gov.in/nd1_noc19_me71/preview