

CSE472: Artificial Intelligence

School: SSCSE		Batch : 2023-2027	
Program: B.Tech			
Branch: ALL		Semester: VI	
1	Course Code	CSE472	Course Name: Artificial Intelligence
2	Course Title	Artificial Intelligence	
3	Credits	3	
4	Contact Hours (L-T-P)	3-0-0	
	Course Status	CORE	
5	Course Objective	The objective of the course is to introduce basic fundamental concepts in Artificial Intelligence (AI), with a practical approach in understanding them. To visualize the scope of AI and its role in futuristic development.	
6	Course Outcomes	After the completion of this course, students will be able to: CO-1. Relate the goals of Artificial Intelligence and AI and non-AI solution. CO-2. Analyze and various AI uninformed and informed search algorithms. CO-3. Extend knowledge representation, reasoning, and theorem proving techniques to real-world problems CO-4. Make use of: Machine learning algorithms in various application domains of AI. CO-5. Select Artificial Intelligent based applications. CO-6. Develop independent (or in a small group) research and communicate it effectively.	
7	Course Description	In this course students will learn basic introduction of Artificial Intelligence, problem solving agents, reasoning, learning and applications of artificial intelligence.	
8	Outline syllabus		CO Mapping
	Unit 1	INTRODUCTION TO AI	
	A	Foundation of AI, Goals of AI, History and AI course line	CO1
	B	Introduction to Intelligent Agents; Environment; Structure of Agent	CO1
	C	AI Solutions Vs Conventional Solutions; a philosophical approach; a practical approach	CO1, CO2
	Unit 2	PROBLEM SOLVING AGENTS	
	A	Problem solving using Search Techniques; Problems; Solutions; Optimality	CO1, CO2
	B	Informed Search Strategies; Greedy Best-First; A* Search; Heuristic Functions	CO1, CO2
	C	Uninformed Search Strategies; BFS; DFS; DLS; UCS; IDFS; BDS	CO1, CO2
	Unit 3	KNOWLEDGE & REASONING	
	A	Knowledge-Based Agents; Logic; First-Order Logic; Syntax-Semantics in FOL; Simple usage;	CO3
	B	Inference Procedure; Inference in FOL; Reduction; Inference Rules;	CO3
	C	Forward Chaining; Backward Chaining; Resolution	CO3
	Unit 4	LEARNING	
	A	Common Sense Vs Learning; Components; Representations; Feedback	CO1, CO2, CO3, CO4

	B	Learning Types: Supervised; Unsupervised; Reinforcement Learnings				CO1, CO2, CO3, CO4
	C	Artificial Neural Networks: Introduction, types of networks; Single Layer and Multi-Layer n/w.				CO1, CO2, CO3, CO4
	Unit 5	APPLICATIONS				
	A	AI Present & Future; application case studies on NLP, Image Processing;				CO3, CO4, CO5, CO6
	B	Robotics – Hardware; Vision; Navigation based case studies;				CO3, CO4, CO5, CO6
	C	Ambient Intelligence case studies;				CO3, CO4, CO5, CO6
	Mode of examination	Theory				
	Weightage Distribution	CA				ETE
		25%				75%
		Assessment 1 (10)	Assessment 2 (5)	Assignment 1 (5)	Assignment 2 (5)	
	Text book/s*	1. Rich E& Knight K, Artificial Intelligence , Tata McGraw Hill, Edition 3.				
	Reference Books	1. Russell S & Norvig P, <i>Artificial Intelligence: A Modern Approach</i> , Prentice Hall. 2. Dan W. Patterson, <i>Artificial Intelligence & Expert Systems</i> , Pearson Education with Prentice Hall India. Indian Edition.				

Course Outcomes:

Sl. No.	Course Outcome (CO)	
CO-1:	Relate the goals of Artificial Intelligence and AI and non-AI solution.	PO3, PO4, PO5, PO10, PSO1, PSO2, PSO3
CO-2:	Analyze and various AI uninformed and informed search algorithms.	PO1, PO2, PO3, PO4, PO5, PO10, PSO1, PSO2, PSO3
CO-3:	Extend knowledge representation, reasoning, and theorem proving techniques to real-world problems	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2, PSO3
CO-4:	Make use of: Machine learning algorithms in various application domains of AI.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2, PSO3
CO-5:	Select Artificial Intelligent based applications.	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PSO1, PSO2, PSO3
CO-6:	Develop independent (or in a small group) research and communicate it effectively.	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PSO1, PSO2, PSO3

Mapping of POs & COs: CO-PO and CO-PSO Mapping with level of strength

Cou rse Obj ect ives	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	1	2	3	2	2					2		3	2	2

CO2	2	3	3	2	3					2		3	3	2	
CO3	3	3	3	3	2	1	1			1	2	3	2	3	
CO4	3	3	3	3	2	2	1			2	1	3	2	3	
CO5	2	3	3	3	3	2	2	2	3	2	2	3	3	2	
CO6	2	3	3	3	3	2	2	2	3	2	2	3	3	2	
Course Code	Course Name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PS O 1	PS O 2	PS O 3
CSE47 2	Artificial Intelligence	2	3	3	3	3	2	2	2	3	2	2	3	3	2