

## Artificial Intelligence

<b>Offering Branches:</b>	CSE		
<b>Course Category:</b>	PEC	<b>Credits:</b>	3
<b>Course Type</b>	Theory	<b>Lecture-Tutorial-Practical:</b>	3-0-0
<b>Prerequisites:</b>	Basic Mathematics	<b>Continuous Evaluation:</b>	30
		<b>Semester End Evaluation:</b>	70
		<b>Total Marks:</b>	100
<b>Course Outcomes</b>			
Upon successful completion of the course, the student will be able to:			
<b>CO1</b>	Understand the basic concepts of Artificial Intelligence.		<b>L2</b>
<b>CO2</b>	Apply the principles of AI in solutions that require problem solving, knowledge representation.		<b>L3</b>
<b>CO3</b>	Apply Planning and Learning for solving AI problems.		<b>L3</b>
<b>CO4</b>	Analyze a given problem and apply AI Techniques.		<b>L4</b>
<b>Course Content</b>			
<b>UNIT-1</b>	<b>Introduction to AI:</b> Definition of AI Foundations of AI Applications of AI <i>Intelligent agents</i> Agents and Environments Structure of agents Examples of agents		CO1,CO2
<b>UNIT-2</b>	<b>Problem Solving Techniques:</b> Solving Problems by Searching Problem Solving Agents Searching for Solutions <i>Uninformed Search Strategies</i> Breadth first search Depth first Search <i>Informed (Heuristic) Search Strategies</i> Hill climbing A* Algorithm Alpha-Beta Pruning Constraint Satisfaction Problem		CO1,CO3
<b>UNIT-3</b>	<b>Knowledge Representation</b> <i>Logical Agents</i> Knowledge Based Agents Logic Propositional logic First order logic Syntax and Semantics in First order Logic <i>Inference in first order logic</i> propositional vs. First order inference Unification and Lifting		CO2, CO3

	Forward chaining Backward chaining Resolution	
UNIT-4	<b>Planning:</b> The Planning problem Planning with state space search Planning graphs Planning with propositional logic Analysis of planning approaches Hierarchical planning Conditional planning, Continuous and Multi Agent planning	CO3,CO4
UNIT-5	<b>Learning:</b> Learning from Examples Knowledge in Learning Learning probabilistic Models Reinforcement Learning	CO1,CO4
Learning Resources		
Text book:		
1	Stuart Russell and Peter Norvig, “Artificial Intelligence: A Modern Approach” , 3rd Edition, Prentice Hall.	
References :		
1	A Classical Approach to Artificial Intelligence, M.C. Trivedi, Khanna Book Publishing, 2019.	
2	Elaine Rich and Kevin Knight, “Artificial Intelligence”, Tata McGraw Hill	
3	Saroj Kaushik, “Artificial Intelligence”, Cengage Learning India, 2011	
e-Resources and other Digital Material:		
1	<a href="https://www.udemy.com/course/artificial-intelligence-az/">https://www.udemy.com/course/artificial-intelligence-az/</a>	
2	<a href="https://nptel.ac.in/courses/106105078">https://nptel.ac.in/courses/106105078</a>	
3	<a href="https://www.coursera.org/learn/introduction-to-ai">https://www.coursera.org/learn/introduction-to-ai</a>	