

Academic Year: 2023 – 2024							
Department: Computer Science& Engineering							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
21CS54	Artificial Intelligence & Machine Learning	Core	Linear Algebra, Probability and Statistics	3		-	50
Topics Covered as per Syllabus							
Module-1 Introduction: What is AI? Foundations and History of AI Problem-solving: Problem-solving agents, Example problems, Searching for Solutions, Uninformed Search Strategies: Breadth First search, Depth First Search, Textbook 1: Chapter 1- 1.1, 1.2, 1.3 Textbook 1: Chapter 3- 3.1, 3.2, 3.3, 3.4.1, 3.4.3							
Module-2 Informed Search Strategies: Greedy best-first search, A*search, Heuristic functions Introduction to Machine Learning , Understanding Data Textbook 1: Chapter 3 - 3.5, 3.5.1, 3.5.2, 3.6 Textbook 2: Chapter 1 and 2							
Module-3 Basics of Learning theory Similarity Based Learning Regression Analysis Textbook 2: Chapter 3 - 3.1 to 3.4, Chapter 4, chapter 5.1 to 5.4							
Module 4 Decision Tree learning Bayesian Learning Textbook 2: Chapter 6 and 8							
Module 5 Artificial Neural Network Clustering Algorithms Textbook 2: Chapter 10 and 13							
Textbooks							

1. Stuart J. Russell and Peter Norvig, Artificial Intelligence, 3 rd Edition, Pearson, 2015 2. S. Sridhar, M Vijayalakshmi "Machine Learning". Oxford, 2021 Reference:	
List of Reference Books Elaine Rich, Kevin Knight, Artificial Intelligence, 3 rd edition, Tata McGraw Hill, 2013 George F Luger, Artificial Intelligence Structure and strategies for complex, Pearson Education, 5th Edition, 2011 Tom Michel, Machine Learning, McGrawHill Publication.	
List of URLs, Text Books, Notes, Multimedia Content, etc decision-tree/tutorial/ https://www.javatpoint.com/unsupervised-artificial-neural-networks	
Course Outcomes	After studying this course, students will be able to 1. Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations. 2. Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning and to understand the basic concepts of Concept Learning. 3. Outline the concepts of Decision Tree Learning and illustrate Artificial Neural Networks and its issues. 4. Understand theory of probability & statics related to Bayes Classifier, Bayesian Belief N/W's, etc. 5. Understand instance based and reinforcement learning algorithms and compare learning algorithms.
Internal Assessment Marks: 50 (3 Session Tests are conducted during the semester and marks allotted based on average of best three performances).	

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	21CS54		TITLE: Artificial Intelligence & Machine Learning										
List of Course Outcomes	Program Outcomes												Total
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	
CO-1	2	2	1	1	-	-	-	1	-	1	-	2	10
CO-2	2	2	1	1	-	-	-	1	-	-	-	2	09
CO-3	2	2	1	2	-	-	-	1	-	-	-	2	10
CO-4	3	2	1	2	-	-	-	1	-	-	-	2	11
CO-5	3	2	1	2	-	-	-	1	-	-	-	2	11
Total	12	10	05	08	-	-	-	05	-	01	-	10	51

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution 0 = No Contribution

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	21CS54	TITLE: Artificial Intelligence & Machine Learning	
List of Course Outcomes	Program Outcomes		Total
	PSO-1	PSO-2	
CO-1	3	-	3
CO-2	3	-	3
CO-3	3	-	3
CO-4	3	-	3
CO-5	3	-	3
Total	15	-	15