COURSE MODULE FOR THE SESSION 2023-24(Odd SEMESTER)

Course Syllabi with CO's

Academic Year: 2023 - 2024							
Department: Computer Science & Engineering (Data science)							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
21AI54	**Principles of Artificial Intelligence**	Core	**Linear Algebra, Probability and Statistics**	3	0	0	40

Objectives:
◆ Gain a historical perspective of AI and its foundations
◆ Become familiar with basic principles of AI toward problem solving
◆ Get to know approaches of inference, perception, Uncertain Knowledge and Reasoning

Topics Covered as per Syllabus

Module -1
Introduction: What is AI? Foundations and History of AI
Intelligent Agents: Agents and environment, Concept of Rationality, The nature of environment, The structure of agents.

Module -2
Problem-solving: Problem-solving agents, Example problems, Searching for Solutions Uninformed Search
Strategies: Breadth First search, Depth First Search, Iterative deepening depth first search;

Module -3
Informed Search Strategies: Heuristic functions, Greedy best first search, A*search. Heuristic Functions
Logical Agents: Knowledge–based agents, The Wumpus world, Logic, Propositional logic, Reasoning patterns
in Propositional Logic

Module -4
First Order Logic: Representation Revisited, Syntax and Semantics of First Order logic, Using First Order
logic.
Inference in First Order Logic : Propositional Versus First Order Inference, Unification, Forward Chaining,
Backward Chaining, Resolution

Module -5
Uncertain Knowledge and Reasoning: Quantifying Uncertainty: Acting under Uncertainty, Basic Probability Notation, Inference using Full Joint Distributions, Independence, Baye's Rule and its use. Wumpus
World Revisited

TextBooks:
1. Stuart J. Russell and Peter Norvig , Artificial Intelligence, 3rd Edition, Pearson,2015

Reference Books
1. Elaine Rich, Kevin Knight, Artificial Intelligence, 3rd edition,Tata McGraw Hill,2013 2. George F Lugar, Artificial Intelligence Structure and strategies for complex, Pearson Education, 5th Edition, 2011

List of URL's
1. https://www.kdnuggets.com/2019/11/10-free-must-read-books-ai.html 2. https://www.udacity.com/course/knowledge-based-ai-cognitive-systems--ud409 3. https://nptel.ac.in/courses/106/105/106105077/

Course outcomes: The students should be able to:
● Apply knowledge of agent architecture, searching and reasoning techniques for different applications. ● Analyse Searching and Inferencing Techniques. ● Develop knowledge base sentences using propositional logic and first order logic ● Demonstrating agents, searching and inferencing ● Illustrate the application of probability in uncertain reasoning.

Continuous Internal Evaluation (CIE): The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination (SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

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

Subject Code	18CS43			Title: Operating Systems									
List of Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Total
CO-1	2	2	1	1	-	-	-	1	-	1	-	2	10
CO-2	2	2	1	1	-	-	-	1	-	-	-	2	09
CO-3	3	2	1	2	-	-	-	1	-	-	-	2	11
CO-4	3	2	1	2	-	-	-	1	-	-	-	2	11
CO-5	3	2	1	2	-	-	-	1	-	-	-	2	11
Total	12	10	05	08		-	-	5	-	1	-	10	51

The Correlation of Program Specific Outcome's (PS0's) and Course Outcome (CO's)

Subject Code	21CS44	Title: Operating Systems	
List of Course Outcome's	PSO1	PSO2	Total
CO-1	3	-	3
CO-2	3	-	3
CO-3	3	-	3
CO-4	3	-	3
CO-5	3	-	3
Total	15	-	15

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