

VASAVI COLLEGE OF ENGINEERING(Autonomous)

ACCREDITED BY NAAC WITH 'A++' GRADE

IBRAHIMBAGH, HYDERABAD – 500 031

Department of Computer Science & Engineering**FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE**

Stream- Artificial Intelligence & Machine Learning

(OPEN ELECTIVE-III)

(COMMON for CIVIL, ECE, EEE & MECH)

SYLLABUS FOR B.E V SEMESTER

L:T:P (Hrs./week): 3:0:0	SEE Marks : 60	Course Code: U230E520CS
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVE	COURSE OUTCOMES <i>On completion of the course, students will be able to</i>	
Understand issues and techniques involved in the creation of intelligent systems.	1	Solve searching problems using A*.
	2	Develop an algorithm for playing games.
	3	Represent the knowledge using propositional logic and predicate logic
	4	Understand the Expert Systems
	5	Construct Neural Network to solve problems

CO-PO and CO-PSO mapping															
CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	2	2	1										2	
CO2	3	2	2	2										2	
CO3	3	2	2	1										2	
CO4	2	1	2	1										2	
CO5	2	1	2	2										2	

UNIT I:**Introduction:** Intelligent Systems, Foundation of AI, Sub areas of AI, Applications.**Problem Solving** – State – Space Search and Control Strategies: Introduction, General Problem Solving, Characteristics of problem, Exhaustive Searches, Heuristic Search Techniques, Iterative – Deepening A*.

NP Hegde
18/7/25
for HOD, CSB

UNIT II:

Problem Reduction & Game Playing: Game Playing, Bounded Look – Ahead Strategy and use of Evaluation Function, MINIMAX procedure, Alpha-Beta Pruning.

UNIT III:

Logic Concepts : Introduction, Propositional Calculus, Propositional Logic, Natural Deduction System, Axiomatic System, Semantic Tableau System in Propositional Logic, resolution Refutation in Propositional Logic, Predicate Logic.

UNIT IV:

Expert System and Applications: Introduction, Phases in Building Expert Systems, Expert System Architecture, Expert System versus Traditional Systems, Truth Maintenance Systems, Application of Expert Systems.

UNIT V:

Artificial Neural Networks: Introduction Artificial Neural Networks, Single – Layer Feed Forward Networks, Multi – Layer Feed Forward Networks.

Learning Resources:

1. Saroj Kaushik, "Artificial Intelligence", Cengage Learning, 2011.
2. Russell, Norvig, "Artificial Intelligence, A Modern Approach ", Pearson Education, Second Edition, 2004.
3. Elaine Rich, Kevin Knight, Shivshankar B. Nair, "Artificial Intelligence", Tata McGraw Hill, Third Edition 2009. Stuart Russell, Peter Norvig, Artificial Intelligence – A Modern Approach, Third Edition (2019), Pearson
4. Nils J. Nilsson, Artificial Intelligence: A New Synthesis, (1998), Elsevier

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	<input type="text" value="2"/>	Max. Marks for each Internal Test	:	<input type="text" value="30"/>
2	No. of Assignments	:	<input type="text" value="3"/>	Max. Marks for each Assignment	:	<input type="text" value="5"/>
3	No. of Quizzes	:	<input type="text" value="3"/>	Max. Marks for each Quiz Test	:	<input type="text" value="5"/>

Duration of Internal Tests : 1 Hour 30 Minutes