SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)
Accredited by National Board of Accreditation, AICTE, New Delhi,Accredited by NAAC with "A" Grade – 3.32 CGPA,Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi,Permanent Affiliation to JNTUK, Kakinada
Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

TEACHING PLAN

Course Code	Course Title	Semester/ Regulation	Branches	Contact Periods /Week	Academic Year	Date of commencement of Semester
23AM 3T01	ARTIFICIAL INTELLIGENCE	III/(R23)	AI&ML-A,B	5	2024-2025	30-07-2024

COURSE OUTCOMES

CO1.	Learn the basics of AI, intelligent agents, and their environments.(k1,k2)
CO2.	Understand and apply various search algorithms and game-playing techniques.(k3)
CO3.	Study methods for representing knowledge and reasoning under uncertainty.(k3)
CO4.	Explore logic concepts and different learning methods in AI.(k4)
CO5.	Understand the structure and function of expert systems and their applications.(k4)

UNIT	Outcomes / Bloom s Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
UNIT-I: ARTIFICIAL INTELLIGENCE						
I	**CO1.** Learn the basics of AI, intelligent agents, and their Environments-(k1,k2)	1.1	Introduction	T1	1	Chalk & Board Power point presentations
		1.2	AI problems	T2	1	
		1.3	Foundation of AI and history of AI intelligent agents	T1	2	
		1.4	Agents and Environments	T1	1	
		1.5	The concept of rationality	T1	1	
		1.6	The nature of environments	T1	1	
		1.7	Structure of agents	T1	1	
		1.8	Problem solving agents	T1	1	
		1.9	Problem formulation	T1	1	

			Total		**10**	
UNIT-II: SEARCHING						
II	**CO2.** Understand and apply various search algorithms and game-playing techniques- (k3)	2.1.	Searching for solutions	T1	1	Chalk & Board Power point presentations
		2.2	Uniformed search strategies	T1	2	
		2.3	Breadth first search	T1	1	
		2.4	Depth first Search	T1	1	
		2.5	Search with partial information (Heuristic search) Hill climbing	T1	2	
		2.6	A* Algorithms	T1	1	
		2.7	AO* Algorithms	T1	1	
		2.8	Problem reduction	T2	1	
		2.9	Game Playing-Adversial search	T1	2	
		2.10	Games, mini-max algorithm	T1	2	
		2.11	Optimal decisions in multiplayer games	T1	1	
		2.12	Problem in Game playing	T1	1	
		2.13	Alpha-Beta pruning	T1	1	
		2.14	Evaluation functions	T1	1	
				TOTAL	**18**	
UNIT-III: REPRESENTATION OF KNOWLEDGE						
III	**CO3.** Study methods for representing knowledge and reasoning under uncertainty-	3.1	Knowledge representation issues	T1	1	Chalk & Board Power point presentations
		3.2	Predicate logic- logic programming	T2	2	
		3.3	Semantic nets- frames and inheritance	T1,T2	1	
		3.4	Constraint propagation	T1	1	
		3.5	Representing knowledge using rules	T1	1	

	(k3)	3.6	Rules based deduction systems	T2	1	
		3.7	Reasoning under uncertainty	T1,T2	1	
		3.8	Review of probability	T1	1	
		3.9	Bayes probabilistic interferences	T1	2	
		3.10	Dempstershafer theory	T1	2	
				TOTAL	**13**	
UNIT-IV: LOGIC CONCEPTS						
IV	**CO4.** Explore logic concepts and different learning methods in AI-(k4)	4.1	First order logic	T1	1	Chalk & Board Power point presentations
		4.2	Inference in first order logic	T1	1	
		4.3	Propositional vs. first order inference	T1	1	
		4.4	Unification & lifts forward chaining	T1	2	
		4.5	Backward chaining	T1	1	
		4.6	Resolution	T1	1	
		4.7	Learning from observation Inductive learning	T1	2	
		4.8	Decision trees	T1	1	
		4.9	Explanation based learning	T1	1	
		4.10	Statistical Learning methods	T1	2	
		4.11	Reinforcement Learning.	T1	1	
				TOTAL	**14**	
UNIT-V: EXPERT SYSTEMS						
V	**CO5.** Understand the structure and function of	5.1	Architecture of expert systems	T2	1	Chalk & Board Power
		5.2	Roles of expert systems	T2	1	
		5.3	Knowledge Acquisition Meta knowledge Heuristics	T2	2	

	expert systems and their applications- (k4)	5.4	Typical expert systems MYCIN, DART, XCON	T2	2	point presentations
		5.5	Expert systems shells	T2	2	
				TOTAL	**8**	
				CUMULATIVE PROPOSED PERIODS	**63**	

Text Books:

S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
T1	Stuart Russell and Peter Norvig , Artificial Intelligence A Modern Approach , 4th Edition , Pearson Education, 2023.
T2	Kevin Night and Elaine Rich, Nair B., Artificial Intelligence (SIE-*Special Indian Edition*) , Mc Graw Hill, ,2022.

Reference Books:

S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
R1	David Poole, Alan Mackworth, Randy Goebel, Computational Intelligence: a logical approach , 2nd Edition ,Oxford University Press, 2021.
R2	G.Luger, Artificial Intelligence: Structures and Strategies for complex problem solving , Fourth Edition, Pearson Education, 2021.
R3	Nils J. Nilsson, Artificial Intelligence: A new Synthesis , 1st Edition, Elsevier Publishers, 2020.
R4	Saroj Kaushik, Artificial Intelligence, 1st Edition ,CENGAGE Learning, 2021.

Web Details:

i.	https://ai.google/
ii.	https://swayam.gov.in/nd1_noc19_me71/preview

		Name	Signature with Date
i.	Faculty-I	A.V.S.Sireesha	

ii.	Course Coordinator	Dr.G.Sudhakar	
iii.	Module Coordinator	Dr.B.Rama Krishna	
iv.	Program Coordinator	Dr.B.Rama Krishna	

Principal