

Course Code	PAD21S02J	Course Name	Artificial Intelligence	Course Category	S	Skill Enhancement Course	L	T	P	C
							3	0	4	5

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications	Data Book / Codes/Standards	Nil		

Course Learning Rationale (CLR):	The purpose of learning this course is to,	Learning	Program Learning Outcomes (PLO)
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CLR-1 :	To understand the Artificial Intelligence	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CLR-2 :	To learn the basics of Artificial Intelligence and its importance	Le	Ex	Ex	Dis	Cri	Pr	Ana	R	Sci	Re	Sel	Mu	Eth	Co	IC	Le	Lif	
CLR-3 :	To learn about Convolutional Neural Network, Architecture and tools for implementing CNN.	vel	pe	pe	cipl	tic	obl	lytic	es	ent	fle	f-Dir	ltic	ical	mun	T	ad	e	
CLR-4 :	To learn Recurrent Neural Network and sequence modeling concepts	of	cte	cte	in	al	em	al	Te	ific	ctiv	ect	ult	Re	nit	Ski	ers	Lo	
CLR-5 :	To learn about Natural Language Processing And Deep Learning	Thi	d	d	ary	Thi	Sol	Rea	am	Re	e	ed	ura	as	En	lls	hip	ng	
CLR-6 :	To learn the Reinforcement Learning technique and tools used for implementing	nk	Pr	Att	Kn	ng	vin	soni	Wo	as	Thi	Le	Comp	oni	ga		Sk		
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		(B	y	me	l	l													
		l	(%)	nt															
		m))	(%)															
Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:																		
CLO-1 :	Able to get knowledge about the importance of Artificial Intelligence	2	85	80	L	H	H	H	H	M	-	H	M	H	-	H	-	-	-
CLO-2 :	Able to think about challenges and pitfalls of Artificial Intelligence	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-3 :	Able to Create convolutional neural network using tools	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-4 :	Construct the Recurrent Neural Network using tools	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-5 :	Able to do text analysis using natural language processing techniques and libraries	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-6 :	Construct the model using Reinforcement Learning technique and supporting tools	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-

Duration (hour)	21	21	21	21	21
S-1	SLO-1	Introduction to AI	KNOWLEDGE REPRESENTATION	INFERENCE AND LEARNING	PRODUCTION SYSTEM AND PLANNING
	SLO-2	Challenges of AI	Introduction to Game Playing	Inference	Introduction to Production system
S-2	SLO-1	The importance of training	Alpha Beta Pruning	Forward and Backward Chaining	Control strategies
					Architecture of Expert System

S-3	SLO-1	AI- Agents and Environments	Knowledge Representation using First order logic	Unification	Rete Algorithm	Roles of Expert System
S 4 – S 7	SLO-1	Lab 1: Solving Problems using AI	Lab 4: Working on Knowledge Representation-I	Lab 7: Working on Forward and Backward Chaining	Lab 10: Working on Rete Algorithm	Lab 13: Working on basic Expert System-I
S-8	SLO-1	Search strategies in AI	Knowledge Engineering in First Order Logic	Uncertainty	Planning-STRIPS	Typical Expert System
S-9	SLO-1	Uninformed Search Strategies	Knowledge Engineering in Proportional Logic	Inference in Bayesian Network	Planning with state space search	MYCIN
S-10	SLO-1	Uninformed Search Algorithms	Proportional vs First Order Logic	Learning from Observations	Partial Order Planning	XOON-DART
S 11 – S 14	SLO-1	Lab 2: Working on Uninformed Search Strategies	Lab 5: Working on Knowledge Representation - II	Lab 8: Working on Inferences in Bayesian network	Lab 11: Working on State Space Search	Lab 14: Working on basic Expert System - II
S-15	SLO-1	Informed Search Strategies	Resolution	Forms of Learning	Planning Graphs	Case Study Construction of simple reflex agent with sensor and actuator using Arduino
	SLO-2	Local Search Algorithm		Inductive Learning		
S-16	SLO-1	Problem Formulation	Structured representation of Knowledge Using Scripts	Neural Network-Learning Decision trees	Uses of Planning Graphs	Elements in the Process
S-17	SLO-1	Constraint Satisfaction Problem	Structured representation of Knowledge Using Frames	Reinforcement Learning	Planning & acting in the real world	Interaction between elements
S 18 – S 21	SLO-1	Lab 3: Working on Informed Search Strategies	Lab 6: Working on Structured representation of Knowledge Using Scripts and Frames	Lab 9: Working on Decision Trees	Lab 12: Working on Sentiment analysis	Lab 15: Working on Expert System - III

Learning Resources	<p>1. Stuart Russell, Peter Norvig, "Artificial Intelligence – A Modern Approach", 3rd Edition, Pearson Education / Prentice Hall of India, 2010.</p> <p>2. Joseph C. Giarratano , Gary D. Riley , "Expert Systems : Principles and Programming", 4th Edition, 2015.</p> <p>4. Janakiraman, K. Sarukesi, 'Foundations of Artificial Intelligence and Expert Systems', Macmillan Series in Computer Science, 2000.</p> <p>5. W. Patterson, 'Introduction to Artificial Intelligence and Expert Systems', Prentice Hall of India, 2003.</p> <p>6. Prateek Joshi, "Artificial Intelligence with Python", Packt Publishing, 2017.</p> <p>7. https://www.pdfdrive.net/artificial-intelligence-a-modern-approach-3rd-edition-e32618455.html</p>
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	3. Nils J. Nilsson, "Artificial Intelligence: A new Synthesis", Harcourt Asia Pvt. Ltd., 2000. CURRICULUM AND SYLLABUS B.TECH. – DATA SCIENCE 79	
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Learning Assessment											
Level	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%)#			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
Mr.G.Muruganandam, Group Project Manager, HCL Technologies, Chennai	Dr.Muthu, Professor, Loyola College, Chennai	Dr.B.Rebecca Jayavadhanam
Mr.M. Hemachandar, Tech Lead, Wipro Limited, Chennai	Dr.Vincent, Associate Professor, VIT	