SEMESTER – V

Course Code	UDS21501J	Course Name	*INTELLIGENT AUTOMATION*	Course Category	C	Professional Core Course	L	T	P	C
							4	0	4	6

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
CLR-1 :	To make the participants understand the fundamental concepts of intelligent automation, it business benefits, challenges, tools and techniques involved and its overall framework.	
CLR-2 :	To make the participants comfortable with the concepts how leading enterprises keep the customers at bay and delight shareholders who are looking beyond cost reduction and envisioning long-term success.	
CLR-3 :	To make the participants have a clear understanding of intelligent automation with AI can help to make day to day business operations that are more humane to pleasant one by automating repetitive, monotonous and often tedious tasks	
CLR-4 :	To provide the participants with enough insights about many of the barriers Intelligent Automation poses within an existing IT landscape of the enterprise and defining an end-to-end solution and then leveraging the appropriate enabling technologies against it.	
CLR-5 :	To provide the participants with enough insights about many of the barriers Intelligent Automation poses within an existing IT landscape of the enterprise and defining an end-to-end solution and then leveraging the appropriate enabling technologies against it.	
CLR-6 :	To make the participants a clear view of insights by looking at the success factors and challenges of a successful intelligent automation, then identifying what has most contributed to the success of Intelligent Automation projects.	

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLO-1 :	Have a firm control of the fundamental concepts of intelligent automation and will be able to define intelligent automation from both academic and industry perspective	2	85	80
CLO-2 :	Have a complete control of the differences between intelligent automation and Robotic process automation in terms of processes, tools and techniques, implementation, framework, application etc.	3	85	80
CLO-3 :	Have a firm understanding of how Intelligent automation involves people, organizations and also technologies involving machine learning.	3	85	80
CLO-4 :	have a firm understanding of the barriers Intelligent Automation poses within an existing IT landscape of the enterprise and the possible ways of mitigating them so as to build and deploy an end-to-end solution and then leveraging the appropriate enabling technologies against it.	3	85	80

Program Learning Outcomes (PLO)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Fundamental Knowledge	Application of Concepts	Link with Related Disciplines	Procedural Knowledge	Skills in Specialization	Ability to Utilize Knowledge	Skills in Modeling	Analyze, Interpret Data	Investigative Skills	Problem Solving Skills	Communication Skills	Analytical Skills	ICT Skills	Professional Behavior	Life Long Learning
CLO-1 :	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*
CLO-2 :	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*
CLO-3 :	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*
CLO-4 :	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*

CLO-5 :	Have A firm understanding, knowledge and expertise in creating winning strategies for businesses by mitigating all the pitfalls and confront them well ahead before the actual planning phase of implementation.	3	85	80	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*
CLO-6 :	Able to design and develop natural language processing solution artifacts and ultimately demonstrate an "end-to-end" intelligent automation solution for a given problem statement either in a group or individually.	3	85	80	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*H*	*M*	*M*	*H*	*H*	*H*	*H*

Note: All our curriculum, study materials, assignments, quizzes, lab works, and learning resources are personalized and dynamically generated using machine learning models based on the learner's learning ability. Users can review our learning curriculum only through our intelligent learning management platform (iLMSP), and our learning resources and lab infrastructures are available only in the digital form on our cloud infrastructures.

Duration (hour)		**24**	**24**	**24**	**24**	**24**
S-1	SLO-1	**Unit 1: Intelligent Automation Defined**	Greater processing efficiency	Low Highly scaled automation deployments	Agile implementation	Public-private partnerships
	SLO-2	Intelligent Automation Overview	Ease of use	**Unit 7: Adoption and Barriers to Intelligent Automation Adoption**	Democratization of app development	Private-sector initiatives
S-2	SLO-1	Intelligent Automation Defined from academic	Workforce agility, Scalable infrastructure	Barriers of Intelligent Automation Adoption Overview	CIO leadership	Structural change
	SLO-2	Intelligent Automation Defined industry perspective	**Unit 4: Exploring the Possibilities of Intelligent Automation**	Gaining Organizational Engagement	**Unit 10: The value of intelligent automation**	Workforce change
S-3	SLO-1	Business Benefits of Intelligent Automation	Identifying Opportunities for Intelligent Automation	Internal Stakeholder and Governance Processes	Increasing process efficiency	Building a future workforce
	SLO-2	Business Challenges of Intelligent Automation	Identifying Opportunities for Intelligent Automation	Making the Business Case Stack	Improving customer experience	Components of Intelligent Automation Framework
S-4	SLO-1	Intelligent Automation Tools and Techniques and Framework	Start with a Proof of Concept	Not enough Enough Processes to Automation	Optimizing back office operations	Business Objectives
	SLO-2	Intelligent Automation Techniques	Choosing the Right Processes	Lack of Strategy	Reducing costs as well as risks	Business Process Analysis
S-5 to S-8	SLO-1	Lab 1 :	Lab 4 :	Lab 7:	Optimizing the work force productivity	Lab 13:
	SLO-2					
S-9	SLO-1	Intelligent Automation Framework	Involving the Business and the IT	Lack of Skill and Talent	More effective monitoring and fraud detection	Develop Automated Processes
	SLO-2	**Unit 2: RPA vs Intelligent Automation**	How Intelligent Automation differs from IT Automation?	Change Management and Culture Readiness	Product and service innovation	Intelligent Operations
S-10	SLO-1	RPA Overview	How Automation is powered by artificial intelligence	**Unit 8: Building a winning intelligent automation strategy**	**Unit 11: Early adopters and positive returns**	**Unit 14: Hands On Lab Usecase Implementation (Consumer-3)**

	SLO-2	Business Benefits of RPA	How Intelligent automation addresses societal and business challenges	Defining your vision	Define your business outcomes first	Self Driving Cars
S-11	SLO-1	Business Drivers of RPA	**Unit 5: Rethinking Industries for Intelligent Automation**	Organizational Design	Process Analysis	Problem statement
	SLO-2	Intelligent Automation Overview	Intelligent Automation to Be More Innovative	Governance and Pipeline	Prioritization &	Problem type
S-12	SLO-1	Business Benefits of Intelligent Automation	Success Factors, Strategy for intelligent automation	Delivery Methodology	Excellence	Data engineering
	SLO-2	Business Drivers of Intelligent Automation	Combining RPA and artificial intelligence	Service Model	Process discovery	Data pipeline
S-13 to S-16	SLO-1	Lab 2 :	Lab 5 :	Lab 8:	Lab 11:	Lab 14:
	SLO-2					
S-17	SLO-1	RPA vs Intelligent Automation	Technology, infrastructure, and cybersecurity	Roles and Responsibilities of candidates	Process Mapping	Model selection
	SLO-2	**Unit 3: Benefits of Intelligent Automation**	Mature process definitions, standards, and processes, Innovative Applications, Preparing the Workforce	Architecture of technology components	Process Mapping	Model engineering
S-18	SLO-1	Working of Intelligent Automation	**Unit 6: Moving Forward With Intelligent Automation**	**Unit 9: Factors for intelligent automation success Tuning**	Data Management & Governance	Mode outcome
	SLO-2	Why is Intelligent Automation important	Implementation challenges of Intelligent Automation	Designating automation as a strategic priority	The Human Factor	Mode Analysis
S-19	SLO-1	How to adopt Intelligent Automation	What Businesses Does Intelligent Automation Work For?	Pursuing people-focused initiatives	Monitoring Intelligent Automation	Model optimization
	SLO-2	,Best practices of AI in Intelligent Automation	How Intelligent Automation Is The Best For Business	Developing an operating model that enables scaling	Skill oriented education	Model pipeline
S-20	SLO-1	Best Intelligent Automation, Accuracy, Speed	How Intelligent Automation is coming of the age	Modularity and packaged business capabilities	Engaging with the workforce	Data visualization
	SLO-2	Service Continuity	More process work is pivoting to machines	Automation guidelines	Lifelong learning programmes and incentives	User interface
S-21 to S-24	SLO-1	Lab 3:	Lab 6:	Lab 9:	Lab 12:	Lab 15:
	SLO-2					

Learning Resources	1. Pascal Bornet, Ian Barkin & Jochen Wirtz, "Intelligent Automation", 2020 2. Debanjana Dasgupta, "Intelligent Automation Simplified, BPB Publications, 2021

Learning Assessment											
	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%	15%	20%	15%	20%	15%	20%	15%	20%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	15%	10%	15%	10%	15%	10%	15%	10%	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.Jothi, Periyasamy , Chief AI Architect DeepSphere.AI, CA, USA	Dr.S.Gopinathan, Associate Professor, University of Madras, Chennai	Mr. Venkat Subramanian, SRMIST