Short Syllabus

BECE309L Artificial Intelligence and Machine Learning (3-0-0-3)

Foundations of AI - Agents and rationality, Agent Architecture Types; Problem-solving by Searching - Search algorithms, strategies; Knowledge Representation - Agents based on Propositional Logic; Probability reasoning and uncertainty - Knowledge representation in uncertainty, Decision making; Data Preparation for Machine Learning - Data Cleaning, Integration, Transformation; Learning from Examples - Forms of Learning, Regression, Decision Trees, Ensemble Learning; Deep Learning - Convolutional Networks, Recurrent Neural Networks.

	Course Title		L	T	P	C
BECE309L	Artificial Intelligence and Machine Learning		_	0	0	3
Pre-requisite	BMAT201L	Syl	labu		ersi	or
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Course Objectiv						
	uainted with different types of intelligent agents.					
	and the importance and significance of Machine learning	g.				
3. To preface	the essentials of Deep Learning.					
Course Outcome	2					
	course, students will be able to					
	end different intelligent agents and its variants.					
	real-world problem using the various search algorithms					
	ious symbolic knowledge representation.	-				
	telligent agents for decision making.					
	al-time issues using various learning methodologies.					
	p learning algorithms for solving real-world problems.					
0. 7.pp.y 4.00	producting algorithms for containing road from production.					
Module:1 Four	dations of Al			4	hou	ırs
Introduction – Ag	ents and rationality – Task environment – Agent Archite	ecture	Тур	es.		
M. I I. O. D. I.						_
	lem-solving by Searching				hou	ırs
Search Space –	Search algorithms, strategies – Search in complex envi	ronme	nts.			
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	wledge Representation			6	hou	ırs
Knowledge-based	d agents, Agents based on Propositional Logic – First-o	raer ic	gic.			
	sability reasoning and uncertainty			6	hoi	ırc
Module:4 Prob	pability reasoning and uncertainty	on ma	kina		hou	
Module:4 Prob	rability reasoning and uncertainty rtainty, Knowledge representation in uncertainty, Decision	on ma	king			
Module:4 Prob		on ma	king			
Module:4 Prob Quantifying uncer complex.		on ma	king	– S		le
Module:4 Prob Quantifying uncer complex.	rtainty, Knowledge representation in uncertainty, Decision			- S	Simp hou	le
Module:4 Prob Quantifying uncer complex.	tainty, Knowledge representation in uncertainty, Decision of the Preparation for Machine Learning			- S	Simp hou	le
Module:4 Prob Quantifying uncer complex. Module:5 Data Basics of Vector Reduction.	Preparation for Machine Learning S & Matrices – Overview: Data Cleaning, Integration			- S 4 rma	hou tion	irs 8
Module:4 Probability and a complex. Module:5 Data Basics of Vector Reduction. Module:6 Lear	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration	n, Tra	nsfo	- S 4 rma	hou tion	urs
Module:4 Probability and proba	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration integration from Examples ng – Dimensionality reduction - Regression – Statistic	n, Tra	nsfo	- S 4 rma 9 ds:	hou tion	urs
Module:4 Prob Quantifying uncer complex. Module:5 Data Basics of Vector Reduction. Module:6 Lear Forms of Learnin Bayes, Nearest N	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration ning from Examples ng – Dimensionality reduction - Regression – Statistic leighbor, Decision Trees – Random Forest, Clustering,	n, Tra	nsfo	- S 4 rma 9 ds:	hou tion	urs
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Module:4 Probability and a pro	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration ning from Examples ng – Dimensionality reduction - Regression – Statistic leighbor, Decision Trees – Random Forest, Clustering, achine Learning in Signal Processing, Intelligent Anteni	n, Tra	nsfo	- S 4 rma 9 dds: Lea	hou tion hou Naï	urs ve
Module:4 Probability and a pro	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration ning from Examples ng – Dimensionality reduction - Regression – Statistic leighbor, Decision Trees – Random Forest, Clustering, achine Learning in Signal Processing, Intelligent Anteni	n, Tra cal Me Enser	nsfo	- S 4 rma 9 dds: Lea 7	hou hou hou Naïi arnii	urs //e- ng
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Module:4 Probability and a complex. Module:5 Data Basics of Vector Reduction. Module:6 Lear Forms of Learning Bayes, Nearest Nearest Nearest Nearest Nearest Nearest Nearest Nearest Networks – Recurrent Networks –	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration ning from Examples ng – Dimensionality reduction - Regression – Statistic leighbor, Decision Trees – Random Forest, Clustering, achine Learning in Signal Processing, Intelligent Anteni D Learning ward Networks – Computational graphs for Deep Learn	n, Tra cal Me Enser na.	nsfo ethoc nble	4 rma 9 ds: Lea	hou hou hou Naïi arnii	urs ve-
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Module:4 Probability and a complex. Module:5 Data Basics of Vector Reduction. Module:6 Lear Forms of Learning Bayes, Nearest Name Case studies – Module:7 Deep Simple Feed For Networks – Recu	Preparation for Machine Learning s & Matrices – Overview: Data Cleaning, Integration ning from Examples ng – Dimensionality reduction - Regression – Statistic leighbor, Decision Trees – Random Forest, Clustering, achine Learning in Signal Processing, Intelligent Anteni b Learning ward Networks – Computational graphs for Deep Learn rrent Neural Networks – Kernel Machines – Hidden Mar	n, Tra cal Me Enser na.	nsfo ethoc nble	4 rma 9 ds: Lea	hou hou hou Naï arnii	urs /e- ng
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	Applications, 2020, 2 nd Edition, PHI Learning Pvt. Ltd., India.								
2.	Alpaydin ethem, Introduction to Machine Learning, 2019, 3 rd edition, PHI Learning Pvt.								
	Ltd., India.								
Mode of Evaluation: Continuous Assessment Test, Digital Assignment, Quiz and Final									
Assessment Test									
Recommended by Board of Studies		14-05-2022							
Approved by Academic Council		No. 66	Date	16-06-2022					