A ST OF TECHNOLOGY		National Institute of Technology Meghalaya An Institute of National Importance													CURRICULUM	
Prog	gramm	ne Mas	ster of Con	nputer App	olications				Academic Year of Reg			of Regula	ion 2024-25			
Dep	artme	nt Con	nputer Scie	ence and E	ngineering						Semester				V	
Course		1		Course	lama		D.,	- Di-it-	_	Credit Structure Marks					Distribution	
Cod	de	Course Name Pre-Requisit							L	Т	Р	С	INT	MID	END	Total
CA603		Deep Learning							3	0	0	3	50	50	100	200
										CO's	Statement				Bloom's Taxonom	
		deep lear	rning			nd theoretica		itions of		CA603.1	Able to understand deep learning print including neural networks, optimization algorithms, and advanced architecture			nization ectures.	n Understand	
Course Objectives		implementi learning ted										develop practical skills in enting and applying various deep techniques and algorithms across domains.			Create	
		To explore Advanced Architectures and Training Techniques							Outcomes	CA603.3	Able to enhance their critical think problem-solving abilities through analysis and evaluation of deep lemodels and methodologies.			n the	Analyse	
		To develous to		l skills in im	plementing	deep learnin	g model	s for		CA603.4	Able to Understand attention med and their role in machine translation with encoder-decoder architecture			tion, along	Understand	
COs		Mapping with Program Out							comes (POs)				Mar	pping with	PSOs
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CA603.1		1	1		1	3	2			1					1	1
CA603.2			1	_	3	_	1	2						_	1	1
CA603.3 CA603.4		1	2	3	1	2								1	2	
				1	2	2	3	1						1	2	
CA6	03	1.00	1.33	2.00	1.75	2.33	2.00	1.50	LLABUC	1.00				1.00	1.50	1.00
No.							Co		LLABUS					Houre	<u> </u>	200
l I		Content House ory of Deep Learning, McCulloch Pitts Neuron, Multilayer perceptrons, Sigmoid neurons, Gradient Descent, Feed ward Neural Networks, Back Propagation												10	COs CA603.1	
II	Regu Regu train	cipal Component Analysis and its interpretations, Singular Value Decomposition, Auto encoders and relation to PCA, jularization in auto encoders, Denoising auto encoders, Sparse auto encoders. Jularization: Bias Variance Tradeoff, L2 regularization, Early stopping, Dataset augmentation, Greedy Layerwise Prening, Better activation functions, Better weight initialization methods, Batch Normalization, Learning Vectorial presentations Of Words													CA603.1, CA603.2	
III	Recu	avolutional Neural Networks, LeNet, AlexNet, ZF-Net, VGGNet, GoogLeNet, ResNet current Neural Networks, Back propagation through time (BPTT), Vanishing and Exploding Gradients, Truncated TT, GRU, LSTMs													CA603.2, CA603.3	
IV	IV Encoder Decoder Models, Attention Mechanism, Attention over images											10	CA603.4			
						T	otal Ho	urs						42		
sser	ntial R	eadings	;													
				ıa Benjio,	Aaron Co	urville, "De	ep Lea	rning", The	MIT Press,	2016						
2.	Richa	ard O. D	uda, Pete	r E. Hart,	David G. \$	Stork, "Patt	ern Cla	assification'	", 2nd Edition	n, John W	iley & Son	s Inc., 20°	12			
	emen	tary Rea	ndinas													