GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Minor/Honours Degree Syllabus)

Subject Code : N116AG01

Subject Name : Deep Learning and Neural Network

WEF Academic Year :	2025-26
Semester :	6
Category of the Course :	Compulsory

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
				Theory		Practical		
L	T	PR	C	ESE (E)	PA(M)	ESE (V)	PA (I)	
3	0	2	4	70	0	30	0	100

Course Content :

Sr. No.	Course Content	No. of Hours	% of Weightage
1	**Module 1 :** Information flow in a neural network, understanding basic structure and ANN.	8	20
2	**Module 2 :** Training a Neural network, how to determine hidden layers, recurrent neural network.	8	20
3	**Module 3 :** Convolutional neural networks, image classification and CNN.	10	20
4	**Module 4 :** RNN and LSTMs. Applications of RNN in real world.	9	20
5	**Module 5 :** Creating and deploying networks using tensor flow and keras.	7	20
	Total :	**42**	**100**

Reference Book :

1. John Paul Mueller, Luca Massaron, Deep Learning for Dummies, John Wiley & Sons.
2. Adam Gibson, Josh Patterson, Deep Learning, A Practitioner's Approach, Shroff Publisher /O'Reilly Publisher. Media.
3. Christopher M. Bishop, Neural Networks for Pattern Recognition, Oxford.
4. Russell Reed, Robert J MarksII, Neural Smithing: Supervised Learning in Feedforward Artificial Neural Networks, Bradford Book Publishers.

Course Outcome :

After Completion of the Course, Student will able to :

No	Course Outcomes	RBT Level*
01	To design and implement Artificial Neural networks.	AP
02	To decide when to use which type of NN.	EL

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

List of Laboratory/Learning Resources Required :

1. Introduction to Kaggle and how it can be used to enhance visibility.
2. Build general features to build a model for text analytics.
3. Build and deploy your own deep neural network on a website using tensor flow.

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