



**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY,  
EAST DELHI CAMPUS,  
SURAJMAL VIHAR-110092**

<b>Semester: 5<sup>th</sup></b>												
<b>Paper code: AIML355</b>								<b>L</b>	<b>T/P</b>	<b>Credits</b>		
<b>Subject: Fundamentals of Deep Learning Lab</b>								<b>0</b>	<b>2</b>	<b>1</b>		
<b>Marking Scheme:</b>												
1. Teachers Continuous Evaluation: As per university examination norms from time to time												
2. End term Examination: As per university examination norms from time to time												
<b>INSTRUCTIONS TO EVALUATORS: Maximum Marks: As per university norms</b>												
1. This is the practical component of the corresponding theory paper.												
2. The practical list shall be notified by the teacher in the first week of the class commencement under the intimation to the office of the HOD/ Institution in which they appear is being offered from the list of practicals below.												
3. Instructors can add any other additional experiments over and above the mentioned in the experiment list which they think is important.												
4. At least 8 experiments must be performed by the students.												
<b>Course Objectives:</b>												
<b>1.</b>	Implementation of deep learning models in Python and train them with real-world datasets.											
<b>2.</b>	Implementation of Convolution Neural Network (CNN), Recurrent Neural Network (RNN) and Deep Learning NLP in Python.											
<b>Course Outcomes:</b>												
<b>CO1</b>	Design and Implement Convolution Neural Network for object classification from images or video.											
<b>CO2</b>	Implement Autoencoder, Recurrent Neural Network, LSTM, its variants and Deep NLP.											
<b>Course Outcomes (CO) to Programme Outcomes (PO) Mapping</b>												
(Scale 1: Low, 2: Medium, 3: High)												
<b>CO/PO</b>	<b>PO01</b>	<b>PO02</b>	<b>PO03</b>	<b>PO04</b>	<b>PO05</b>	<b>PO06</b>	<b>PO07</b>	<b>PO08</b>	<b>PO09</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>CO1</b>	2	1	1	1	2	1	1	1	2	1	2	2
<b>CO2</b>	2	1	1	1	2	1	1	1	2	1	2	2

**List of Experiments:**

1. To explore the basic features of Tensorflow and Keras packages in Python
2. Implementation of ANN model for regression and classification problem in Python.
3. Implementation of Convolution Neural Network for MRI Data Set in Python.
4. Implementation of Autoencoders for dimensionality reduction in Python.
5. Application of Autoencoders on Image Dataset.
6. Improving Autocoder's Performance using convolution layers in Python (MNIST Dataset to be utilized).
7. Implementation of RNN model for Stock Price Prediction in Python
8. Using LSTM for prediction of future weather of cities in Python



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9. Implementation of transfer learning using the pre-trained model (MobileNet V2) for image classification in Python.
10. Implementation of transfer learning using the pre-trained model (VGG16) on image dataset in Python.
11. NLP Analysis of Restaurant Reviews in Python.
12. Building a NLP model for Spam Detection using TFIDF (Term Frequency Inverse Document Frequency Vectorizer).