

# **1-Month Structured Syllabus**

## **Week 1: Python for ML + Data Exploration & Preprocessing**

- Introduction to AI, ML, and DL
- Python Refresher
- NumPy for Numerical Operations
- Pandas for Data Handling
- Data Visualization

## **Week 2: Introduction to Machine Learning (Supervised Learning)**

- ML Pipeline & Workflow
- Data Preprocessing Techniques
- Linear Regression
- Logistic Regression
- Model Evaluation Metrics

## **Week 3: Classification Algorithms + Intro to Unsupervised Learning**

- K-Nearest Neighbors (KNN)
- Decision Trees
- Random Forest (Intro Level)
- K-Means Clustering
- Dimensionality Reduction (PCA)

## **Week 4: Introduction to Deep Learning with Keras (Easy to Medium Level)**

- What is Deep Learning?
- Understanding Neural Networks
- Activation Functions & Training Concepts
- Building a Simple ANN with Keras
- Model Evaluation & Improvements