Ai Course Guide

Week	Section	Session	Title
-	Intro to Programming & AI World	-	Introduction to AI, ML, Computer Vision, NLP
1	Intro to Programming & AI World	Session 1	Environment Setup (Anaconda, Jupyter , VSCODE)
1	Intro to Programming & AI World	Session 2	Intro to Python, Variables, Data Types, Numbers & Math, Boolean, Strings, Lists
2	Intro to Programming & AI World	Session 3	Tuples, Sets, Dictionaries, If Conditions, For Loops
2	Intro to Programming & AI World	Session 4	Built-in Functions, Lambda Expressions, File Handling, Map, Filter, Git & GitHub
3	Intro to Programming & AI World	Session 5	OOP, Classes & Objects, Data Hiding, Encapsulation
3	Intro to Programming & AI World	Session 6	Inheritance, Polymorphism
4	Exploratory Data Analysis	Session 7	Linear Algebra, Vector & Matrix Operations, Statistics
4	Exploratory Data Analysis	Session 8	NumPy
5	Exploratory Data Analysis	Session 9	Pandas
6	Data Visualization	Session 10	Data Visualization with Matplotlib & Seaborn
7	Data Preprocessing	Session 11	Data Cleaning, Missing Data, Categorical Data, Outliers Detection
7	Data Preprocessing	Session 12	Handling Imbalanced Classes, Train/Test Sets, Feature Scaling
8	Machine Learning	Session 13	Simple Linear Regression, Multiple Linear Regression
8	Machine Learning	Session 14	Classification (Logistic Regression, KNN)
9	Machine Learning	Session 15	Classification (Decision Tree, SVM, Ensemble Methods, Random Forest)
9	Machine Learning	Session 16	Evaluating Model Performance
10	Machine Learning	Session 17	Clustering (K-means), Dimension Reduction (PCA)
10	Machine Learning	Session 18	Model Selection, Cross Validation, Hyperparameter Tuning
11	Intro to Deep Learning & AI Applications	Session 19	Introduction to Deep Learning, Neuron Functions, ANN
11	Intro to Deep Learning & AI Applications	Session 20	Training ANN, Simple Computer Vision Projects
12	AI Applications	Session 21	Face Recognition - Deep learning-based identification and verification of individuals
12	AI Applications	Session 22	Object Detection - Detection and localization of objects using CNNs
13	AI Applications	Session 23	Object Tracking - Continuously monitor object movement across frames
13	AI Applications	Session 24	Human Emotion Recognition - Analyzing facial expressions to detect emotions

14	AI Applications	Session 25	Business Card Scanner - OCR to extract and store contact details
14	AI Applications	Session 26	Face Mask Detection - Detecting face masks in images/video streams
15	AI Applications	Session 27	Traffic Light Detection - Detect and localize traffic lights in images for autonomous systems
15	AI Applications	Session 28	Sentiment Analysis - Analyze text to detect positive, negative, or neutral sentiment
16	AI Applications	Session 29	Text Classification - Categorizing text into predefined categories
16	AI Applications	Session 30	Text Extraction, Summarization, and Auto-Correction - Extracting data, summarizing, and auto-correcting text