



Training & Placements Pvt Ltd



PYTHON WITH AI&ML COURSE

The Python logo, consisting of two interlocking snakes, one blue and one yellow.

Prepared By (CTO) SSB TRAINING AND PLACEMENT

45 Days Duration

Duration: 45 days × 2 hrs/day = 90 hrs

Goal: Equip learners with fundamental and advanced Python with AI&ML skills for software development, automation, data analysis, and web development.

Core Domains

1. Python Fundamentals (15%)

- Python Setup, Syntax, Data Types, Operators, Control Statements
- Functions, File Handling, Exception Handling
- OOP Concepts + Mini Projects (ATM, Calculator, Student Management)

2. Python for Data Science (10%)

- NumPy (Arrays, Operations) & Pandas (Data Cleaning, DataFrame)
- Matplotlib & Seaborn Visualization
- Exploratory Data Analysis (EDA) Project

3. Statistics & Mathematics (10%)

- Descriptive Statistics (Mean, Median, Mode, Variance, Std Dev)
- Probability & Bayes Theorem
- Linear Algebra (Vectors, Matrices) & Gradient Descent

4. Supervised Machine Learning (15%)

- ML Types + Linear & Logistic Regression
- KNN, Decision Tree, Random Forest, SVM, Naive Bayes
- Model Evaluation (Accuracy, Precision, Recall, F1, ROC)

5. Unsupervised Machine Learning (10%)

- K-Means, Hierarchical Clustering, DBSCAN
- PCA & Feature Engineering
- ML Project (Loan / Placement Prediction)

6. Deep Learning (15%)

- Neural Networks & Backpropagation
- ANN, CNN, RNN, LSTM
- Image Classification Project

7. NLP & Generative AI (10%)

- Text Cleaning, Tokenization, TF-IDF, Word Embeddings,
- Sentiment Analysis
- Transformers, LLM Basics, Prompt Engineering & Chatbot Project

8. Deployment & MLOps (10%)

- Flask / FastAPI, Streamlit
- MDocker, Virtual Environment, Requirements
- Cloud Deployment (AWS/GCP) & ML Web App

9. Advanced Topics & Best Practices (15%)

- AI Taxi Demand Prediction & Stock Price
- Prediction Hospital Management with ML &
- Face Recognition AI Chatbot using LLM &
Final Project Presentation



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