

# Python with AI & ML

## A. Core Python

1. **Python Basics**
  - Variables
  - Loops
2. **Data Structures**
  - Lists
  - Dict
3. **Functions & Logic**
  - Custom functions
  - Importing modules

**Output:** Python practice sheet

## B. Data Libraries

1. **NumPy**
  - Arrays
  - Vector operations
2. **Pandas**
  - DataFrames
  - Cleaning / Merging

**Output:** Data manipulation project

## C. ML Basics

1. **Regression**
  - Linear regression
2. **Classification**
  - Logistic regression
  - Decision trees
3. **Evaluation**
  - Confusion matrix
  - Accuracy

**Output:** Small ML model

## D. AI Concepts

1. **NLP Basics**
  - Tokenization
  - Stemming
2. **Neural Networks Intro**
  - Structure
  - Training

**Output:** Text analysis mini-project

## **E. Python AI Projects**

1. **Chatbot Logic**
    - Rule-based
    - Intent mapping
  2. **Recommendation System**
    - Similarity metrics
    - Basic recommender
- Output:** Python + AI project