Python with AI Program

Duration: 4 Months
Level: Beginner to Advanced
Mode: Online / Offline

Module 1: Python Programming Foundations

Topics Covered

- Python Syntax & Setup
- Variables & Data Types
- Operators & Expressions
- Conditional Statements
- Loops (For / While)
- Functions Basics

Tasks Assigned

- Write basic Python scripts using variables and operators
- Build a simple conditional program
- Practice loop-based exercises
- Write and call custom functions

Session Outcome

Students understand core Python syntax and can write simple structured programs.

Module 2: Data Structures & File Handling

Topics Covered

- Lists, Tuples & Sets
- Dictionaries
- String Manipulation
- Reading & Writing Files
- Working with CSV/JSON Data
- Error Handling Basics

Tasks Assigned

- Build a program using lists and dictionaries
- Read and process data from a CSV file
- Write a JSON-based data script
- Add basic error handling to a script

Session Outcome

Students can organise, store and process data using Python's core data structures and file handling.

Module 3: Functions, Modules & Automation Basics

Topics Covered

- Functions in Depth (Arguments, Return Values)
- Python Modules & Libraries
- Writing Reusable Scripts
- Introduction to Automation
- Scheduling & Task Automation Basics
- Working with Dates & Time

Tasks Assigned

- Build a reusable utility module
- Write an automation script for a repetitive task
- Plan a scheduled script run (concept exercise)
- Refactor a script into functions

Session Outcome

Students can structure Python code into reusable functions and build simple automation scripts.

Module 4: Working with APIs

Topics Covered

- What is an API
- REST API Basics
- Making Requests with Python (requests library)
- Working with JSON Responses
- API Authentication Basics
- Rate Limits & Error Handling

Tasks Assigned

- Call a public API and process the response
- Build a script that fetches and displays API data
- Handle authentication for a sample API
- Handle API errors gracefully

Session Outcome

Students can connect to and work with external APIs using Python.

Module 5: Introduction to AI & LLM Tools

Topics Covered

- What is AI/LLM (Conceptual Overview)
- Using AI/LLM APIs in Python
- Prompt Writing for Developers
- Building Simple AI-Powered Scripts
- Use Cases for AI in Automation
- Responsible & Practical AI Use

Tasks Assigned

- Call an AI/LLM API from a Python script
- Build a simple AI-assisted text tool
- Practice prompt writing for a coding task
- Document an AI use-case idea

Session Outcome

Students understand how to integrate AI/LLM APIs into their own Python programs.

Module 6: Building AI-Assisted Automations

Topics Covered

- Combining APIs + AI for Automations
- Building a Data Processing Pipeline
- Automating Reports with AI
- Simple Chatbot/Assistant Concepts
- Working with Automation Libraries
- Debugging Automation Scripts

Tasks Assigned

- Build an AI-assisted automation script
- Create a simple data-processing pipeline
- Build a basic report generator using AI
- Debug and refine an automation project

Session Outcome

Students can combine Python automation with AI tools to build practical mini-tools.

Module 7: Working with Real Data

Topics Covered

- Introduction to Data Basics
- Reading & Cleaning Real-World Data
- Basic Data Analysis with Python
- Simple Data Visualisation
- Presenting Data Insights
- Working with Spreadsheets Programmatically

Tasks Assigned

- Clean and process a real-world sample dataset
- Perform basic analysis on a dataset
- Create simple visualisations from data
- Present findings from a dataset

Session Outcome

Students can work with real datasets and extract and present basic insights using Python.

Module 8: Project Documentation & Career Growth

Topics Covered

- Documenting a Python Project
- Version Control Basics (Git/GitHub Overview)
- Building a Developer Portfolio
- Freelancing & Job Search Basics
- Resume & Interview Preparation
- Presenting Technical Projects

Tasks Assigned

- Document a completed Python project
- Publish a project to GitHub
- Build a developer portfolio page
- Prepare a resume and project pitch

Session Outcome

Students graduate with a documented, portfolio-ready project and the confidence to apply for developer or automation roles.

Final Capstone Project

Students must complete:

- 1 Python Automation Script
- 1 AI-Assisted Mini Tool
- 1 API Integration Project
- 1 Data Analysis Exercise
- Portfolio Presentation

Enrol Now

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