Python 101 for Data Science - Formula

Level: Beginner
Duration: 8 weeks (16 sessions × 40 min each ≈ 10–11 hours)
Audience: Learners with little to no coding experience
Course Goal: Build foundational Python skills required for entry-level data science tasks.
Course fee:

- Self-paced: $100
- Instructor-led: $150

Learning Objectives

By the end of this course, students will be able to:

Python Fundamentals

- Understand the Python programming environment and basic syntax.
- Use variables, operators, and primitive data types.
- Write clean, readable Python code.

Control Flow & Functions

- Use loops and conditional statements to control logic.
- Create and use functions with parameters and return values.
- Import and work with Python modules.

Data Structures

- Store and manipulate data using lists, tuples, sets, and dictionaries.
- Understand when to use each data structure.

Working With Files

- Read and write text files and CSV files — essential for data work.

Beginner Data Science Tools

- Use NumPy arrays for numerical operations.
- Use pandas for data manipulation and analysis.
- Build confidence through a mini-project.

Weekly Breakdown:

1. Week 1: Session 1 – Introduction & variables;

   Session 2 – Data types
2. Week 2: Session 1 – Loops;

   Session 2 – Conditionals
3. Week 3: Session 1 – Functions;

   Session 2 – Modules
4. Week 4: Session 1 – Lists & dictionaries;

   Session 2 – Tuples & sets
5. Week 5: Session 1 – File I/O;

   Session 2 – Reading/writing CSV
6. Week 6: Session 1 – Introduction to NumPy;

   Session 2 – Array operations
7. Week 7: Session 1 – Introduction to pandas;

   Session 2 – DataFrames
8. Week 8: Session 1 – Mini-project walkthrough;

   Session 2 – Mini-project completion

End-of-Course Deliverables:

✓ Completed mini-project
✓ Python scripts
✓ Data handling practice
✓ Confidence using Python for data tasks