



Introduction to Python

COURSE OUTLINE

Course Description

This hands-on course is designed to teach the fundamentals of programming using Python, one of the world's most popular and versatile programming languages. Students will learn essential concepts such as variables, data types, conditional statements, loops, functions, and basic problem-solving techniques through hands-on exercises and guided instruction. No prior programming experience is required. By the end of the course, participants will apply their new skills to complete a short, practical project that reinforces key concepts and demonstrates how Python can be used to create real-world applications.

- 01** **Introduction**
 - What is Python?
 - Uses and Applications
 - Benefits over other programming languages

- 02** **Getting Started**
 - Download/Install Python
 - Setup a Code Editor
 - First Program: Hello World
 - Basic formatting: indentation, line endings

- 03** **Variables & Data Types**
 - Text (str)
 - Numeric (int, float)
 - Boolean (bool)
 - Arrays (list, tuple, set, dict)

- 04** **Conditionals**
- Evaluate a condition (if, elif, else)
 - Switch statements (match/case)
 - Comparison operators (==, !=, >, <, >=, <=)
 - Chaining operators (and, or, not)

- 05** **Loops**
- Iterate over a sequence (for)
 - Repeat on condition (while)
 - Loop control statements (break, continue)

- 06** **Functions & Classes**
- Functions (def)
 - Classes

- 07** **User Input**
- Collecting user input (input)

- 08** **Project: Number Guesser**
- Define project goals
 - Hands-on: Code Number Guesser

- 09** **Next Steps / Resources**
- Recommended additional learning
 - Online resources

- 10** **Questions & Comments**