

# Programming Essentials: Fundamentals of Python

## Course Objectives

This course is designed to equip students with a solid foundation in Python programming, covering everything from basic syntax to data manipulation and visualization. By the end of the course, students will be able to build their own Python applications and solve real-world problems.

### Target Audience:

- Aspiring developers
- Data analysts
- Beginners in programming
- Students pursuing tech careers

## About the Course

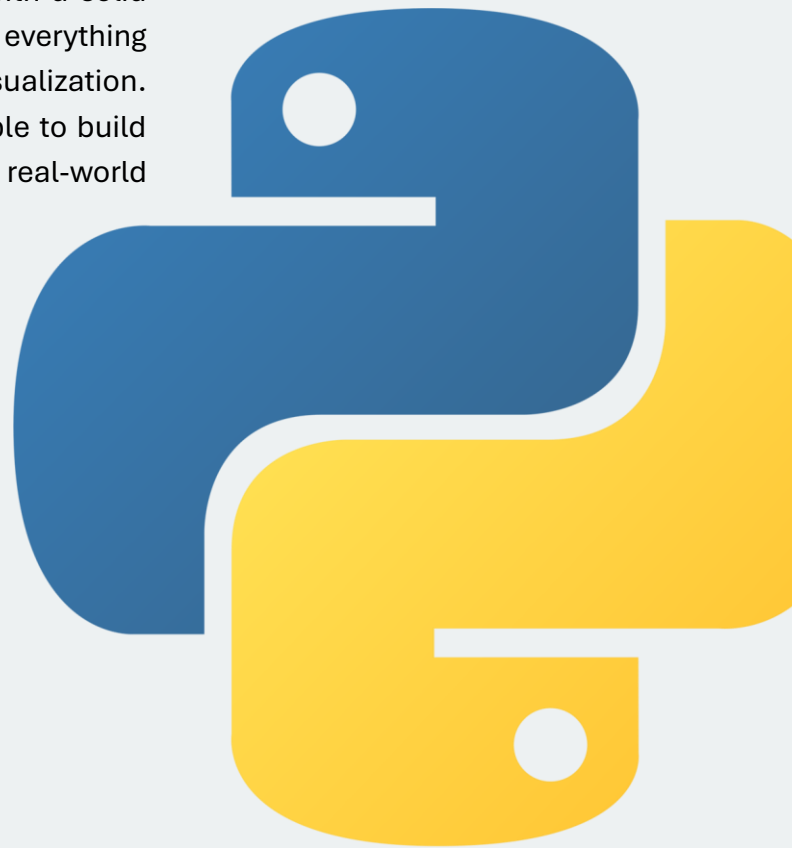
**Number of Hours:** 24

**Mode of Study:** In-person (4 Days) or Online (2 Weeks, 12h/w)

**Location:** United Kingdom, London



No previous engineering or programming knowledge is required



# Course Description

- **Introduction to Python:** Overview of Python, its applications, and setting up development environments.
- **Python Syntax and Structure:** Learn the basic syntax, variables, data types, and operators.
- **Control Flow:** Master conditional statements, loops, and control statements for dynamic programming.
- **Functions in Python:** Defining and using functions, including lambda functions and function scope.
- **Data Structures:** Explore lists, tuples, dictionaries, and sets, along with their methods.
- **String Manipulation:** Learn string methods, formatting, slicing, and working with multiline strings.
- **Error Handling and Exceptions:** Understand Python's exception-handling mechanism and how to raise custom exceptions.
- **Modules and Packages:** Work with built-in Python modules, create your own, and understand package management.
- **NumPy for Data Analysis:** Introduction to NumPy arrays, array operations, and mathematical functions.
- **Pandas for Data Manipulation:** Learn how to use Pandas for data frames, slicing, filtering, and aggregation.
- **Data Visualization with Matplotlib:** Create basic plots, customize graphs, and save visualizations.

## Learning Outcomes:

By the end of the training, you will be able to:

- Write efficient Python code using appropriate syntax and data structures
- Analyze and manipulate data using NumPy and Pandas
- Handle files, manage errors, and structure projects using modules and packages

## Equipment:

You will only need a personal laptop and your enthusiasm.

## Why Us?

- ✓ World-class training materials developed by researchers and professionals.
- ✓ Value for money training
- ✓ Courses are based on hands-on activities and real case-studies
- ✓ Educators with over a decade of experience in industry
- ✓ Pre and post training support so you feel supported in your journey.

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