



TrainSmart  
Academy

CERTIFIED

**Python Professional**



## What skills will you learn?

The learning objectives of this course are:

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To learn how to use indexing and slicing to access data in Python programs.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to build and package Python modules for reusability.
- To learn how to read and write files in Python.
- To learn how to design object-oriented programs with Python classes.
- To learn how to use class inheritance in Python for reusability.
- To learn how to use exception handling in Python applications for error handling.

## Course Objectives

The course is designed to provide Basic to Professional level knowledge of Python. Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language.

## Method of Instruction

100% Hands on Training, support of study material, Python codes

## Who can attend?

Students to Working Professional



## Course Outline

### 1. Introduction to Python Programming Language

- Why Python?
- Real-world applications using Python
- Python versions - Python 2 vs Python 3

### 2. Installation & Setup

- Installing Python
- Installing IDE
- How Run Program in Python

### 3. Python Fundamentals

- Interactive Mode
- Scripting Mode
- Comments
- Variables
- Basic Data types
- Operators and Expression

### 4. Data Types

- Numbers
- Strings
- Collection Data type
  - List
  - Tuples
  - Set
  - Dictionary

### 5. Program flow control

- if, elif and else
- Loops
- for loop
- continue, break and else
- while loop

### 6. Exception Handling

- Exceptions and Errors
- Handling Exceptions

### 7. I/O

- File/Directory manipulations
- Reading a file
- Writing a file

### 8. Folder

- How to Create Folder

### 9. Calendar and Time in Python

### 10. Functions

- Function Definition
- Function Calling
- Returning values
- Variable scope
- Arguments and it's types

### 11. Object-Oriented Programming

- Classes and Objects
- Instances, Constructors, self
- Class attributes

### 12. Numpy Library with Programs

### 13. Scipy Library with Programs

### 14. Pandas Library with Programs

### 15. Matplotlib Library