# Introduction to Python Programming Training

Duration: **5 Day**

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In this {*training}, you will learn about and explore the Python language at an intermediate level. You will learn to write Python programs dealing with sequences and mappings, program flow control, system calls and file manipulation.

## Prerequisites

There are no prerequisites for this course.

## Who Should Attend

Although this is an introductory-level Python programming class, you should already have a working, user-level knowledge of UNIX/Linux, Mac, or Windows. While not required, basic skills with at least one other programming language will be helpful. We will collaborate with you to design the best solution to ensure your needs are met, whether we customize the material, or devise a different educational path to help your team best prepare for this training.

## Training Outline

# Python Programming

Module 1:

Language Overview

- Big Data and Database Management
- Data Science and Analysis
- Machine Learning
- Artificial Intelligence
- Network Programming and System Automation

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- Philosophy and Syntax of Python
- Multi-paradigm Language
- Procedural Programming
- Object Oriented Programming
- Functional Programming

Module 2:

Standard Data Types

- The Python Standard Library
- Built-in Functions and Modules
- Basic Operators and Type Casting
- Numeric Data Types and Functions
- String Data Type and Functions

Module 3:

Flow Control

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- if-else
- For loop
- While loop
- break and continue statements

Module 4:

Functions

- Function Definition
- Scope Rules
- Recursion
- Random Module Functions

Module 5:

Lists and Tuples

- Immutable vs Mutable Types
- List and Tuple Functions
- Comparison and Conversion

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- Multi-dimensional Lists and Tuples

Module 6:

Dictionaries

- Key and Value Pairs
- Dictionary Functions
- Sorting and Converting

Module 7:

External Libraries

- Important Libraries
- How to Install and Import
- Examples

Module 8:

Basic File Operations

- Open a File with r/w/a/b Modes
- Basic File Operations

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- File and Directory Methods

Module 9:

Exception Handling

- Exception Types
- Multiple Exceptions
- try and except block
- Finally expression

Module 10:

Data Formats

- CSV
- JSON
- YAML
- XML
- Labs with JSON Files

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Module 11:

Dates and Times

- Understanding Time
- The time Module
- The datetime Module
- Working with Timezones
- Operations with Time and Dates