

# PYTHON LANGUAGE COURSE

## (CODING SYLLABUS)

### Course Overview

Python is a general-purpose, object-oriented programming language with high-level programming capabilities. It has become famous because of its apparent and easily understandable syntax, portability, and easy to learn.

**Duration:** 45 Days

### Job Prospects

Python is known to be one of the most popular programming languages. It offers several career opportunities as well. Every year, the demand for python developer's increases. And this is also one of the reasons why Python is one of the most popular programming languages known.

### Job Profiles

- Junior Programmer
- Software Engineer
- DevOps Engineer
- Data Scientist

### Course Content

#### Introduction to Python

- What is Language & History of Python.
- Advantages & Disadvantages of Python
- Installing Python
- Python language Environment
- User Interface or IDE
- Writing and executing first python program

#### Python Language Fundamentals

- Working with Interactive mode
- Working with Script mode
- Python Character Set
- Python Tokens, Keywords, Identifiers, Literals, Operators
- Variables and Assignments
- Input and Output in Python

#### Operators

- Arithmetic Operators
- Relational Operators
- Logical Operators
- Membership Operators
- Identity Operators
- Bitwise Operators
- Assignment Operators
- Operators Precedence
- Evaluating Expression
- Type Casting

## Conditional Statements

- The if Statement
- The if-else Statement
- The if-elif Statement
- Nested if Statements
- Python Indentation

## Looping Statements

- The For Loop
- The While Loop
- Loop else Statement
- Nested Loops
- Break and Continue

## Data Handling

- Standard Data Types
- Numbers
- String Handling
- Python List
- Python Tuple
- Python Set
- Python Dictionary
- Frozen set
- Bool
- Mutable and Immutable

## String Manipulation

- Introduction to Python String
- Accessing Individual Elements
- String Operators
- String Slices
- String Functions and Methods

## List Manipulation

- Introduction to Python List
- Creating List
- Accessing List
- Joining List
- Replicating List
- List Slicing

## Tuples

- Introduction to Tuple
- Creating Tuples
- Accessing Tuples
- Joining Tuples
- Replicating Tuples
- Tuple Slicing

## Dictionaries

- Introduction to Dictionary
- Accessing values in dictionaries
- Working with dictionaries
- Properties

## Set and Frozen set

- Introduction to Set and Frozenset
- Creating Set and Frozenset
- Accessing and Joining
- Replicating and Slicing

## The Range Function

- Introduction to range()
- Types of range() function
- Use of range() function

## Python Functions

- Built-In Functions
  - Introduction to Functions
  - Using a Functions
  - Python Function Types
  - Structure of Python Functions
- User Defined Functions
  - Types of Functions
  - Flow of Execution
  - Arguments and Parameters
  - Default Arguments, Named Arguments
  - Scope of Variables
- Recursion Function
  - Use of recursion function

## Modules and Packages

- Built-in Modules
  - Importing Modules in Python Programs
  - Working with Random Modules
  - E.g. - builtins, os, time, datetime, calendar, sys, etc.
- User Defined Functions
- Structure of Python Modules

## File Input/Output

- Text and Bytes files
- Opening a file
- Reading and Writing Files
- Other File tools
- Array
- Python Numpy