

# Python Programming

---

**Duration: 32 Hours**

**Prerequisites**

- There are no Pre-requisites for this course.
- A Basic Knowledge of Programming Language is Advantageous.

**Course Content**

---

**1. An Introduction to Python**

- Why Python , its Unique Feature and where to use it?
- Python environment Setup
- Discuss about IDE's like IDLE, Pycharm and Enthought Canopy
- Start programming on interactive shell.
- Python Identifiers, Keywords
- Discussion about installed module s and packages
- Access Command line arguments within programs

**2. Conditional Statement ,Loops and File Handling**

- Python Data Types and Variable
- Condition and Loops in Python
- Decorators
- Python Modules & Packages
- Python Files and Directories manipulations
- Use various files and directory functions for OS operations

**3. Python Core Objects and Functions**

- Built in modules (Library Functions)
- Numeric and Math's Module
- String/List/Dictionaries/Tuple
- Complex Data structures in Python
- Arbitrary data types and their Data Structure
- Python built in function
- Python user defined functions
- Python packages and functions
- The anonymous Functions - Lambda Functions

**4. Object Oriented Python**

- OOPs Concepts
- Object , Classes and Destroying Objects
- Accessing attributes,Built-In Class Attributes
- Inheritance and Polymorphism
- Overriding Methods,Data Hiding
- Overloading Operators

**5. Exception Handling in Python**

- Exceptions Handling
- Handling various exceptions using try....except...else
- Try-finally clause
- Argument of an Exception and create self exception class
- Python Standard Exceptions
- Raising an exceptions, User-Defined Exceptions

**6. Debugging Python Programs**

- Debug Python programs using pdb debugger
  - Assert for debugging
  - Testing with Python using UnitTest
  - Iterable and generator in Python
  - Yielding from the generators
  - Standard project setup in Python
-

## 7. **Regular Expression**

- Regular Expressions
- What are regular expressions?
- The match and search Function
- Compile and matching
- Matching vs searching
- Search and Replace feature using RE
- Extended Regular Expressions
- Wildcard characters and work with them

## 8. **Multithreading**

- Multithreading with Python
- What is multithreading?
- Starting a New Thread
- The Threading Module
- Synchronizing Threads

## 9. **Package Installation and Windows spreadsheet parsing**

- What is pip, easy\_install?
- Set up the environment to install packages?
- Install packages for XLS interface, Database Interface and Web interface
- XML and XLS parsing with Python
- Create XLS reports with Python

## 10. **Database Handling**

- Python MySQL Database Access
- Create Database Connection
- DML and DDL Operations with Databases
- Performing Transactions
- Handling Database Errors
- Disconnecting Database

## 11. **Django Framework**

- Basic of Django Framework & its uses
- Installation and setting up Django
- Syntax and URL
- Testing
- Deploying Django Framework

## 12. **Flask Framework & TkInter GUI Framework**

- Overview of Flask Framework
- Installation of Flask and Demo Application
- Overview of TkInter Framework
- Tkinter Widgets

## ❖ **Hands-on Experience on Industry Project, Resume Formation and Interview Tips**

---