

Python Course Outline:

Level 1 : Understanding Python (Basic Python)

Duration: 20 hours

Chapter 1: Introduction

- 1.1 : Why study Python?
- 1.2 : Installation and Environment setup
- 1.3 : What is Python?
- 1.4 : Python vs Java

Chapter 2: Python Grammar

- 2.1 : Python Syntax
- 2.2 : Variables and Data types
- 2.3 : Operators
- 2.4 : Numbers
- 2.5 : Strings
- 2.6 : Lists and Tuples
- 2.7 : Dictionary

Chapter 3: Decision making and Control flow

- 3.1 : *if* statement and else clause
- 3.2 : *for* statement and *range()* function
- 3.3 : *pass* statement and while

Chapter 4: Functions & Modules

- 4.1 : Defining a function
- 4.2 : Calling a function
- 4.3 : Passing arguments by value and reference
- 4.4 : Standard modules
- 4.6 : *import* statement
- 4.7 : Namespaces and scoping
- 4.8 : *dir()* function
- 4.9 : Packages

Chapter 5: Input and Output

- 5.1 : Printing to screen
- 5.2 : Reading keyboard input
- 5.3 : Opening and closing files
- 5.4 : Reading and writing files

Chapter 6: Exceptions and error handling

- 6.1 : Handling an exception
- 6.2 : *except* clause
- 6.3 : *try-finally* clause
- 6.4 : User defined exceptions

Level 2: Thinking in Python (Advanced Python)

Duration: 20 hours

Chapter 7: Object oriented Python

- 7.1 : Classes and Objects
- 7.2 : Inheritance
- 7.3 : Overriding and overloading
- 7.4 : Data hiding
- 7.5 : Exceptions classes
- 7.6 : Iterators and Generators

Chapter 8: Python standard library

- 8.1 : **Regular expressions**
- 8.2 : Searching and Sorting
- 8.3 : *math* module
- 8.4 : *date* and *time*
- 8.5 : Data compression and Performance measurement
- 8.6 : Output formatting
- 8.7 : Templating
- 8.8 : Working with binary data records
- 8.9 : **Multi-threading**

Chapter 9: Python with Web servers

- 9.1 : Web server configuration
- 9.2 : HTTP header
- 9.3 : Cookies

Chapter 10: Python with Databases

- 10.1 : Database connection
- 10.2 : Creating tables
- 10.3 : *insert*, *update* and *delete* operations

Chapter 11: Python in Networking

- 11.1 : Python Internet module
- 11.2 : *socket* module
- 11.3 : Simple server and client
- 11.4 : Emailing using Python