**Introduction To Python**

Installation and Working with Python Understanding Python variables Python basic Operators Understanding python blocks

**Python Data Types**

Declaring and using Numeric data types: int, float, complex Using string data type and string operations Defining list and list slicing Use of Tuple data type

**Python Program Flow Control**

Conditional blocks using if, else and elif Simple for loops in python For loop using ranges, string, list and dictionaries Use of while loops in python Loop manipulation using pass, continue, break and else Programming using Python conditional and loops block

**Python Functions, Modules And Packages**

Organizing python codes using functions Organizing python projects into modules Importing own module as well as external modules Understanding Packages Powerful Lamda function in python Programming using functions, modules and external packages

**Python String, List And Dictionary Manipulations**

Building blocks of python programs Understanding string in build methods List manipulation using in build methods Dictionary manipulation Programming using string, list and dictionary in build functions

**Python File Operation**

Reading config files in python Writing log files in python Understanding read functions, read(), readline() and readlines() Understanding write functions, write() and writelines() Manipulating file pointer using seek Programming using file operations

**Python Object Oriented Programming – Oops**

Concept of class, object and instances Constructor, class attributes and destructors Real time use of class in live projects Inheritance , overlapping and overloading operators Adding and retrieving dynamic attributes of classes Programming using Oops support

**Python Regular Expression**

Powerful pattern matching and searching Power of pattern searching using regex in python Real time parsing of networking or system data using regex Password, email, url validation using regular expression Pattern finding programs using regular expression

**Python Database Interaction**

SQL Database connection using python Creating and searching tables Reading and storing config information on database Programming using database connections

**Python Multithreading**

Understanding threads Forking threads Synchronizing the threads Programming using multithreading

**Contacting User Through Emails Using Python**

Installing smtp python module Sending email Reading from file and sending emails to all users addressing them directly for marketing

**Python CGI Introduction**

Writing python program for CGI applications Creating menus and accessing files Server client program

**Distributed Computing.**

How to write programs that utilize multiple machines. Covers some core programming concpets such as actors, client/server computing, REST, remote procedure call, and distributed objects. Includes coverage of XML-RPC and use of the multiprocessing library to implement distributed objects.

Advanced I/O handling. An examination of different I/O handling models including blocking I/O, nonblocking I/O, polling, signal-driven I/O, and asynchronous I/O.

**Generators and Coroutines**

A look at how to use generators and coroutines to implement a form of cooperative multitasking (sometimes referred to as tasklets, greenlets, coroutines, etc.). Topics include using generator functions to implement tasks and writing task schedulers for controlling such functions. Major parts of this section will be related the use of generators to the I/O handling models described in the previous two sections.

**Sample Project**