Advanced Python Syllabus:

Day 1- Introduction
- **What is Python?**
- **Comparison of Python with other languages**
- **Salient features of Python**
- **Execution model of Python**

Installation
- **Installing Python**
- **Python Installer**
- **Python 2.7 v/s Python 3.6**
- **Anaconda**
- **Indentation in Python**
- **Editors**
- **Python Syntax**

Day 2- Data types and Variables
- **Variables Naming Convention**
- **Variable v/s Constants Literal**
- **Creating Variables**

Numbers
- **Integer Number**
- **Float Number**
- **Number Arithmetic**
- **type() and id()methods**
- **Comments in Python**

Day 3-String
- **Creating String**
- **String Indexing**
- **String Immutable**
- **String Slicing**

String Methods
- **Lower**
- **Upper**
- **islower**
- **isupper**
- **split (default and with delimiter)**
- **len**

String Operations
- **Concatenation**
- **Multiplication**

Day 4- List
- **Creating List**
- **List Indexing**
- **List Mutable**
- **List Slicing**

List Methods
- **index**
- **append**
- **extend**
- **pop**
- **remove**
- **sort**
- **reverse**
- **len**
- **Difference between append and extend**
- **List Operations**
- **Concatenation**
- **Multiplication**

Day 5- List and String
- **Nesting List**
- **Creation of Nested list**
- **Accessing the elements of internal list**
- **Difference list methods on nested list**
- **Different list operation on nested list**
- **Difference between list and string**
- **Converting a list into String**
- **Converting a string into List**

Day 6- Tuple
- **Creating Tuple**
- **Tuple Indexing**
- **Tuple Immutable**
- **Tuple Slicing**
- **List Methods**
- **len**
- **max**
- **min**
- **Tuple Operations**
- **Concatenation**
- **Multiplication**
- **Nested Tuple**
- **Creation of Nested Tuple**
- **Accessing the elements of internal tuple**
- **Difference tuple methods on nested tuple**
- **Different tuple operation on nested tuple**
- **List and Tuple**
- **Difference between list and tuple**
- **Tuple inside the List**

- **List inside the Tuple**

Day 7- Set
- **Creating Set**
- **Uniqueness feature of Set**
- **Set Indexing (Why it's not possible)**
- **Set Mutable**
- **Set Slicing (Why it's not possible)**
- **Set Methods**
- **len**
- **omax**
- **min**
- **sum**
- **sorted**
- **any**
- **enumerate**
- **add**
- **remove**
- **pop**
- **Set Operations**
- **Union**
- **Intersection**
- **difference**

Comparison of List, Tuple and Set
- **List v/s Tuple v/s Set**

Day 8- Dictionary
- **Creating Dictionary**
- **Uniqueness feature of Keys in Dictionary**
- **Dictionary Indexing (Why it's not possible)**
- **Dictionary Mutable**
- **Adding new key value pair to the dictionary**
- **Dictionary Methods**
- **len**
- **str**
- **clear**
- **copy**
- **okeys**
- **values**
- **items**
- **update**
- **has_key**
- **pop**
- **Difference between 2.7 and 3.6**
- **del keyword v/s pop method**
- **Union**
- **Intersection**
- **difference**

DAY 9- Control Structure
- **If/Else statements**
- **Membership test for list**
- **Membership test for tuple**
- **Membership test for set**
- **Membership test for dictionary**
- **Boolean values**

Looping
- **For/whileloop**
- **Range()function**
- **Break statement**
- **Continue statement**
- **Pass statement**
- **Iterating over list**
- **Iterating over tuple**
- **Iterating over set**
- **Iterating over dictionary**
- **Else clause on loops**

Day 10- Basic Functions
- **Defining Function**
- **Calling function**
- **Returning Values**
- **Functions with more than return value**
- **Default Argument**
- **Keyword Argument**
- **Variable Length Argument**
- **Unpacking Variable Length Argument**
- **Documentation strings**

Day 11- Decorators, Generator & Iterators
- **Defining Decorator**
- **Defining Generator**
- **Yield**
- **Function vs Generator**
- **Defining Iterators**
- **Iter() and next()**
- **Iterable**

Day 12- Basic I/O
- **Input function**
- **Input with raw_input()**
- **Output with old string format**
- **Python format function**

File handling
- **Opening/Reading from the file**
- **Writing to the file**
- **Iterating through a file**

- **Different mode of file opening**
- **Methods of file object**
- **read**
- **seek**
- **tell**
- **readlines**
- **open**
- **close**
- **write**

Day 13- Exception
- **Exceptions**
- **Handling the Exceptions**
- **OOPS Concept**
- **Classes**
- **Objects**
- **Abstraction**
- **Inheritance**
- **Encapsulation**
- **Polymorphism**

Day 14- OOPS Implementation
- **Class Syntax**
- **Instance Variable**
- **Member function**
- **Inheritance**
- **Types of Inheritance [Single, Multiple, Multi-Level, Hybrid, Hierarchical]**
- **Method overriding**
- **Data Encapsulation**
- **Private**
- **Public**
- **Protected**
- **Constructor and Destructor**

Day 15- Modules
- **Importing a modules**
- **Renaming a importing module**
- **Importing using from keyword**
- **Importing * from the modules**
- **Creating Your own module**
- **Using Your own Modules**

DAY 16- Advance Concept on Data Structures
- **List Comprehension**
- **Dictionary Comprehension**
- **Nested Comprehension**

Lamda Function
- **Expression in Lamda Function**
- **Print statements in Lamda Function**

- **Conditional statement in Lamda function**

DAY 17- Regular expression
- **Basics of Regular Expression**
- **Match function**
- **Match object methods Group**
- **Groups**
- **Search function**
- **Matching v/s Searching**
- **Search and Replace**

DAY 18- Logging in Python
- **Basic Configuration**
- **Creating the logging file**
- **Different level of logging**
- **Logging for your created module**

DAY 19- Multi threading in Python
- **Starting a new thread**
- **Creating Thread using Threading Module**
- **Synchronizing Threads**
- **Different level of logging**

DAY 20- Unit testing in Python
- **Unit test module**
- **Command line interface**
- **Calling specific unit test cases**
- **Creating own unit test lass**
- **Different assert methods**

DAY 21, 22- NumPy
- **Creating arrays**
- **Indexing Arrays**
- **Array Transposition**
- **Vectorize Functions**
- **Universal Functions**
- **Shape Manipulation**

DAY 23, 24- SciPy
- **Characteristics of SciPy**
- **Integration**
- **Multiple Integration**
- **Realtime Examples**

DAY 25, 26- Pandas
- **Creating a Series**
- **Converting a Python Dictionary into Series**

- **Converting a Series into Python Dictionary**
- **Missing Data**
- **Creating a Data Frame**
- **Accessing Series from Data Frames**
- **Selecting Entries in Series**
- **Selecting Entries in Data Frames**

DAY 27- Database Connectivity
- **Establishing connection to databases**
- **Create Table, Insert, execute sp,etc**

DAY 28, 29- Command Line Argument
- **Reading command line arguments**
- **Using Command line arguments**

Standard Modules
- **Sys module – access to exit(), stdout**
- **Math- mathfunction**
- **Datetime- date and time libraries**
- **Dir()function**

DAY 30
- **Mini Project Discussion Based on Real Time Problem**

Course Length: 30 Days

Audience: Students with or without IT experience or knowledge

Student Location: To students from around the world

Delivery Method: Instructor-Led – Live online Training (Corporate and Classroom

Training available)