**Python Course Syllabus**

**Basic Topics**

1. Introduction, Installation and Using Python

* Introduction to Python.
* Advantages and Why Python?
* Installation of Python and Notepad++
* Interactive and Scripting modes of Python
* Learning Input/Output statements
* Indentation and Comments
* Assignment 1 and Quiz 1

1. Data Types

* Introduction to Data Types
* Numbers
* Strings
* List, Tuple, Set
* Dictionary
* Complex Number
* Type Conversion
* Assignment 2 and Quiz 2

1. Arithmetic and Logical Operators

* Introduction to Operators
* Mathematical Operators
* Comparison Operators
* Assignment Operators
* Bitwise Operators
* Bitwise Shift Operators
* Logical Operators
* Operator Precedence
* Assignment 3 and Quiz 3

1. Conditional Execution

* Introduction to Conditional Execution
* IF statements
* IF-ELSE ladder
* Nested IF
* Ternary Operator
* Pass statements
* Compound Expressions
* Assignment 4 and Quiz 4

1. Loops and Iterative Execution

* Introduction to Loops
* While Loop
* For loop
* Nested Loops
* Patterns
* Break and continue statements
* Assignment 5 and Quiz 5

1. Standard and Lambda Functions

* Introduction to Functions
* Standard Mathematical Functions
* Time Functions
* Random Functions
* Lambda Function
* Assignment 6 and Quiz 6

1. Custom Functions
   * Defining Custom Functions
   * Invocating Custom Functions

* Function Arguments
* Return Statement
* Global, Local and Nonlocal Variables
* Assignment 7 and Quiz 7

1. List and Tuples

* Introduction to Lists
* List Operations
* List Functions
* Indexing, Slicing, and Matrices
* Introduction to Tuples
* Tuple Operations
* Tuple Functions
* Difference between Lists and Tuples
* Assignment 8 and Quiz 8

1. Dictionaries and Sets

* Introduction to Dictionaries
* Dictionary Operations
* Dictionary Functions
* Introduction to Sets
* Set Operations
* Set Functions
* Set Quantification with all and any
* Assignment 9 and Quiz 9

1. Exception Handling and File Handling

* Introduction to Exception Handling
* The Try-Except Block
* Different types of Exceptions
* The Optional Else Block and Finally Block
* Assertions and Raising Exceptions
* Introduction to File Handling
* File Operations and Modes
* Assignment 10 and Quiz 10

Advanced Topics (Optional)

1. Regular Expressions (RegEx)
2. Object Oriented Programming
3. Multithreaded Programming
4. Using MySQL Databases with Python
5. GUI Programming (Tkinter)