

# Python Class Syllabus

1. Introduction to Python
  - a. Interpreter and Environment setup
  - b. Basic usage of python
  - c. Variable types and assignments
  - d. Example problems
2. Control Flow Loops
  - a. if Statements
  - b. for Statements
  - c. The range(), xrange() functions
  - d. break, continue and pass Statements, and else Clauses on Loops
  - e. Functions and its definitions
  - f. Example problems
3. Data Structures
  - a. Lists
  - b. Tuples
  - c. Sets
  - d. Dictionaries
  - e. Strings
  - f. Looping techniques
  - g. Example problems
4. Modules
  - a. Basic usage of modules
    - i. datetime
    - ii. re
    - iii. timeit
    - iv. random
    - v. urllib, urllib2, requests
  - b. Custom modules
  - c. Packages
  - d. Example problems

## 5. Input and Output

- a. Input functions
- b. File operations
- c. Output formats
- d. Example problems

## 6. Errors and Exception handling

- a. Syntax Errors
- b. Exceptions
- c. Handling Exceptions
- d. Raising Exceptions
- e. User-defined Exceptions
- f. Example problems

## 7. Classes

- a. Object and Methods
- b. Classes and Objects
- c. Inheritance
- d. Iterators
- e. Generators
- f. Example problems

## 8. Advance topics

- a. List comprehension
- b. Dict comprehension
- c. Database Access
- d. Sending Mail
- e. Multithreading
- f. Example problems

## 9. Algorithms

- a. Linear Search, Binary Search
- b. Bubble Sort, Insertion Sort and Quick Sort
- c. Stacks, Queue and Binary Tree
- d. Example problems