

# Syllabus for Python

**Title of the Course :** Learn programming using Python

**About the course :** The course aims to introduce programming concepts to beginners with hands-on practical training.

**Pre-requisite:** None. The student do not need to have prior knowledge of programming.

**No. of Hours :** 30 hours

**Course objective :** The main objective of the course is to teach basic programming techniques to absolute beginners using the easy to use Python programming language. At the end of the course, the student will be able to

- Look at a problem from the algorithmic approach
- Will be able to write, execute and debug a Python program
- Distinguish between data types
- Explain the working of different operators
- Use decision and iteration structures to solve problems
- Use lists to represent sequence of data
- Implement modularity in problem solving through the use of functions

## Detailed Syllabus

1. How the computer works, memory and CPU interactions.
2. Getting started with Python - setting up the programming environment
3. Knowing the basics - Variables, Data types, Operators and Comments
4. Input and Output statements in Python
5. Creating expressions - precedence of operators, Type mismatch examples
6. Simple Statements
7. Conditionals and Branching
  - a. Conditional Test
  - b. Simple if, if-else, if-elif-else

8. Iteration structures
  - a. while loop
  - b. for loop
  - c. break, continue
9. Working with Lists
  - a. Creating a list
  - b. accessing elements in a list
  - c. Changing, Adding, and Removing Elements .
  - d. Organizing a List - Sorting, Printing, Finding an element in a list
10. Functions
  - a. Creating a function
  - b. Passing arguments to a function
  - c. Function returning a value
  - d. Passing a list to a function

**Textbook** : Python Crash Course : 2nd Edition, Eric Matthes, No Starch Press, San Francisco, 2019