Workshop on "Introduction to Python"
21st -28th June 2018

(Lecture: 18 hours, Practical: 18 hours , Exam: 4 Hours)= 40 hours
Introduction to Python programming: This workshop is targeted for students who are not familiar with Python. The objective is to give students a working understanding of how to use Python so that they will be able to use the language to quickly solve a variety of problems, automate solutions, and apply these new skills in other classes.
Prerequisites/co-requisites: Basic Concept of "C programming language "

Course Instructor:

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Course Objectives: Students will gain experience using the Python programming language.
Learning outcomes: After the course, students should be able to:
• implement a given algorithm as a computer program (in Python)
• adapt and combine standard algorithms to solve a given problem (includes numerical as well as non-numerical algorithms)
• adequately use standard programming constructs: repetition, selection, functions, composition, modules, aggregated data (arrays, lists, etc.)
• explain what a given program (in Python) does
• identify and repair coding errors in a program
• understand the concepts of file i/o and to read data from a text file using Python
• understand and use object based software concepts (constructing OO software will be dealt with in the course Software Engineering)

Outline of the course

Day 1(3hours Lecture +3 hours Practical+30minutes Exam)

Introduction

- ✓ History
  - ✓ Features
  - ✓ Setting up path
  - ✓ Working with Python
  - ✓ Basic Syntax
  - ✓ Variable and Data Types
  - ✓ Operator

Conditional Statements

- ✓ If
- ✓ If- else
- ✓ Nested if-else

Day 2(3hours Lecture +3 hours Practical+30minutes Exam)

Control Statements

- ✓ For
- ✓ While
- ✓ Nested loops
- ✓ Break
- ✓ Continue
- ✓ Pass

String Manipulation

- ✓ Accessing Strings
- ✓ Basic Operations
- ✓ String slices
- ✓ Function and Methods

Day 3(3hours Lecture +3 hours Practical+30minutes Exam)

Lists

- ✓ Introduction
- ✓ Accessing list
- ✓ Operations
- ✓ Working with lists
- ✓ Function and Methods

Tuple

- ✓ Introduction
- ✓ Accessing tuples
- ✓ Operations
- ✓ Working
- ✓ Functions and Methods

Day 4(3hours Lecture +3 hours Practical+30minutes Exam)

Dictionaries

- ✓ Introduction ✓ Accessing values in dictionaries
- ✓ Working with dictionaries
- ✓ Properties
- ✓ Functions

Functions

- ✓ Defining a function
- ✓ Calling a function
- ✓ Types of functions
- ✓ Function Arguments
- ✓ Anonymous functions
- ✓ Global and local variables

Day 5(3hours Lecture +3 hours Practical+30minutes Exam)

Modules

- ✔ Importing module
- ✔ Math module
- ✔ Random module
- ✔ Packages
- ✔ Composition

Input-Output

- ✔ Printing on screen
- ✔ Reading data from keyboard
- ✔ Opening and closing file
- ✔ Reading and writing files
- ✔ Functions

Day 6(3hours Lecture +3 hours Practical+30minutes Exam)

OOPs concept

- ✔ Class and object
- ✔ Attributes
- ✔ Inheritance
- ✔ Overloading
- ✔ Overriding
- ✔ Data hiding

Exception Handling

- ✔ Exception
- ✔ Exception Handling
- ✔ Except clause
- ✔ Try ? finally clause
- ✔ User Defined Exceptions

1 Hour Final exam will be held at the end of Course .The date will be announced later. If you are not able to appear final exam then no certificate will be issued