



## SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act 1956)

Re - accredited by NAAC with 'A' Grade

Founder: Prof. Dr. S. B. Mujumdar, MSc., Ph.D. (Awarded Padma Bhushan and Padma Shri by President of India)

**Course Name :** Introduction to Python Programming Lab

**Course Code :** TE7555

**Faculty :** Engineering

**Course Credit :** 1

**Course Level :** 2

**Sub-Committee (Specialization) :** CSC/IT

**Learning Objectives :**

Identify various domains where Python plays a significant role

Write while and for loops to run one or more statements repeatedly

Understand the purpose of functions in Python

Access individual characters in a string and apply basic string operations

Create regular expressions that match text patterns

Understand and Create Objects

**Books Recommended :**

Book	Author	Publisher
Introduction to Python Programming	Gowrishankar, S., and A. Veena	CRC Press, 2018.
Programming in Python 3: a complete introduction to the Python language	Summerfield, Mark	Addison-Wesley Professional, 2010
Python crash course: a hands-on, project-based introduction to programming	Matthes, Eric	No Starch Press, 2015
Python: The Complete Reference	Martin C. Brown	1st Edition, McGraw Hill Education (20 March 2018)

**Course Outline :**

Sr. No.	Topic	Actual Teaching Hours	Contact Hours Equivalence
1	Surface area of a prism can be calculated if the lengths of the three sides are known. Write a python program that takes the sides as input (read it as integer) and prints the surface area of the prism (Surface Area = $2ab + 2bc + 2ca$ ).	2	1
2	Write a python program to convert temperature from centigrade (read it as float value) to Fahrenheit.	2	1
3	Write a program to display the following pattern using nested loops	2	1
4	Write a python program using functions to do the following tasks: a. Convert milliseconds to hours, minutes and seconds. b. Compute a sales commission, given the sales amount and the commission rate. c. Convert Celsius to Fahrenheit. d. Compute the monthly payment, given the loan amount, number of years and the annual interest rate.	2	1

5	Write a function called rotate_word that takes a string and an integer as parameters, and that function should return a new string containing the letters from the original string rotated by the given amount. For example, Scheer rotated by 7 is Sjolly and Smelon rotated by 10 is Scubed.	2	1
6	Write a program that creates a list of numbers 1 100 that are either divisible by 5 or 6.	2	1
7	Write a program that creates a list of numbers 1 100 that are either divisible by 5 or 6.	2	1
8	Make a list of the first eight letters of the alphabet, then using the slice operation do the following operations:a. Print the first three letters of the alphabet.b. Print any three letters from the middle.c. Print the letters from any particular index to the end of the list	2	1
9	Write a function that finds the number of occurrences of a specified character in a string.	2	1
10	Write a python program that has the dictionary of your friends " names as keys and phone numbers as its values. Print the dictionary in a sorted order. Prompt the user to enter the name and check if it is present in the dictionary. If the name is not present, then enter the details in the dictionary.	2	1
11	Create a dictionary that contains usernames as the key and passwords as the associated values. Make up the data for five dictionary entries and demonstrate the use of clear and fromkeys() methods.	2	1
12	Write a python programa. To check whether an item exists within a tuple.b. To check whether an item exists within a tuple.c. To create a list containing three elements, and then create a tuple from that list.	2	1
13	Write a python program that reads the contents of the file and counts the occurrences of each letter. Prompt the user to enter the filename.	2	1
14	Write a Python programa. To search the numbers (0 9) of length between 1 to 3 in a given string.b. To find the substrings within a string	2	1
15	Write a python to create a class called library with data attributes like acc_number, publisher, title and author. The methods of the class should includea. read() acc_number, title, author.b. compute() - to accept the number of days late, calculate and display the fine charged at the rate of \$1.50 per day.c. display the data.	2	1
<b>Total</b>		<b>30</b>	<b>15</b>

**Pre Requisites :**

Knowledge of python programming language is desirable

**Evaluation :**

- A) Continuous Assessment
  - 1. Essential
    - a) Lab Assignments b) Quizzes c) Viva-voce
  - B) End Semester Examination:
    - a) Viva-voce b) Lab Exam

**Pedagogy :**

Interactive Teaching Learning  
Project based Learning

Hands-On

**Expert :**

Dr. Anupkumar M Bongale, Associate Professor (CS and IT), SIT