



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 : Programming and Problem Solving Lab

Course Code : TE7287

Faculty : Engineering

Course Credit : 1

Course Level : 1

Sub-Committee (Specialization) : Computer Science

Learning Objectives :

The students are able to:

Understand and develop Computational Thinking concepts

Express a problem-solving strategy to breakdown a complex problem into a series of simpler tasks

Describe python programs that appropriately utilize built-in functions and control flow statements

Use functions for structuring Python programs.

Represent compound data using Python lists, tuples, dictionaries

Understand and apply object oriented programming concepts.

Books Recommended :

Book	Author	Publisher
Computational Thinking: The Beginners Guide To Problem solving & Programming	Karl Beecher	BCS, The Chartered Institute for IT (11 August 2017).
Python The Complete Reference	Martin C Brown	McGraw Hills

Course Outline :

Sr. No.	Topic	Actual Teaching Hours	Contact Hours Equivalence
1	Design and develop a flowchart or an algorithm for finding area of a circle, rectangle, square & triangle. Design and develop a flowchart or an algorithm to determine whether a Student Passed the Exam or Not	2	2
2	Design and develop a flowchart or an algorithm that takes three coefficients a,b and c of a quadratic equation ($ax^2+bx+c=0$) as input and compute all possible roots.	2	2
3	Write an algorithm that reads three numbers and prints the value of the largest number Python Program to Take the Temperature in Celcius and Covert it to Farenheit	2	2
4	Program to perform different set operations like in mathematics	2	2
5	Python Program to Check Whether a Given Year is a Leap Year Python Program to Take in the Marks of 5 Subjects and Display the Grade	2	2
6	Python Program to Check if a Date is Valid and Print the Incremented Date if it is Python program to find factorial of a number	2	2
7	Python Program to Print an Inverted Star Pattern Python Program to Accept Three Digits and Print all Possible Combinations from the Digits	2	2

8	Program to multiply two matrices using nested loops Python Program to Print all the Prime Numbers within a Given Range	2	2
9	Program to count the number of each vowel in a string Program to check if a string is a palindrome	2	2
10	Python Program to Remove Punctuations From a String Write a python program to reverse a string using user-defined function.	2	2
11	Python Program to Find the Sum of Digits in a Number Write a python program to find the sum of digits using recursion	2	2
12	Python program for a database of phone numbers could be stored using a dictionary and perform Initialize, adding, removing operations.	2	2
13	Write a python program to find the Fibonacci series using modules	2	2
14	Write a python program to represent complex numbers using class	2	2
15	Write a python program to create a sales system for car dealership using Object-oriented techniques	2	2
Total		30	30

Evaluation :

Assignment
Quiz
Viva
Examination

Pedagogy :

Classroom teaching
Practicals using Python