



SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act, 1956)

Re-accredited by NAAC with 'A++' Grade | Awarded Category - I by UGC

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

Course Name: Programming in C Lab
Course Code: TE7289
Faculty: Engineering
Course Credit: 1
Course Level: 2
Sub-Committee (Specialization): Computer Science
Learning Objectives:

The students are able to:

Understand the programming in IDE (Integrated Development Environment) and write, execute and debug simple programs.

Interpret the programming tasks logically and understand making the pseudo-code and flowchart.

Design and implement basic programming solutions including statements, macros, control structures and methods.

Understand and apply the concept of Array and Strings to solve problem statement.

Understand the concepts of Function modules, its usage and memory allocation using Pointers

Understand and apply the concepts of structures and unions: declaration, initialization and implementation.

Identify computational problems, classify tasks and execute it in a group as a mini-project.

Books Recommended:

Book	Author	Publisher
Let Us C	Yashvant Kanetkar, 12th Edition, 2012	BPB Publications
Programming in ANSI C	E. Balagurusamy, Sixth Edition, 2013,	McGraw-Hill Education.
The C Programming Language	Kernighan, Ritchie,	Prentice Hall of India.

Course Outline:

Sr. No.	Topic	Actual Teaching Hours	Contact Hours Equivalence
1	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. Implement a C program for the developed flowchart/algorithm and execute the same to output the possible roots for a given set of coefficients with appropriate messages.	2	2
2	Write a C program to find the roots of a quadratic equation.	2	2
3	Write a C Program to relate two integers using =, > or < using nested ifs & multiple ifs.	2	2
4	Write a C program to find whether (using switch case) A given number is prime or composite. A given number is even or odd.	2	2
5	Write a C program to generate the Fibonacci Series for a given number 'n'.	2	2
6	Write a C program of binary search for a user-given element in a set of 'n' numbers.	2	2

7	Write a C program to perform matrix operations like addition, subtraction and transpose.	2	2
8	Write a C program to accept a string from console and to display the following on console (without using built-in functions): Length of the string Total number of characters in the string Total number of vowels in the string Copy one string into the other.	2	2
9	Write a C program using functions to accept two strings from the console and perform the following operations (without using built-in functions): Compare the strings: equal/not equal Find the longer string. Concatenate the two strings. Find occurrence of substring in the main string	2	2
10	Write a C program using functions to accept a one-dimensional array of integers and sort them in ascending order.	2	2
11	Write a C program of selection sorting using functions.	2	2
12	Write a C program to find the factorial of a number using recursion.	2	2
13	Write a C program using structures to print the pay slip of an employee after accepting details like id. no, name, designation, department and basic salary.	2	2
14	Mini-Project	4	4
Total		30	30

Evaluation:

Assignment
Presentation
Quiz

Pedagogy:

Class room teaching
Practical using tools like Dev C++, Turbo C
Conceptual execution in Mini-Projects

Expert:

Dnaneshwar Suryavanshi, Sr. Tech. Leader, Persistent Technologies