Code: 1BPOPL107E/109E/207E/209E **Course: Programming in C Lab**

Credits: 1 **L:T:P –** 0:0:2:0

SEE: 50 Marks **CIE: 50 Marks**

SEE Hours: 3 **Max. Marks: 100**

Prerequisites if any	
Learning objectives	• To develop problem-solving skills through the implementation of fundamental programming constructs such as loops, functions, arrays, strings, pointers, and structures. • To apply modular programming concepts in solving real-world problems using C language.

Course Outcomes:

On the successful completion of the course, the student will be able to

COs	Course Outcomes	Bloom's level
CO1	Apply basic programming constructs such as input/output, decision making, loops, arrays, and functions to solve mathematical and logical problem.	Apply
CO2	Apply modular programming techniques using strings, pointers, and structures to develop programs for real-life applications	Apply
CO3	Analyze problem statements and design structured solutions using arrays, matrices, and modular programming concepts	Analyze

Mapping with POs and PSOs:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11		PSO1	PSO2
CO1	3	2	2	2	3	1	-	1	2	1	2		3	2
CO2	3	2	3	2	3	1	-	2	2	1	2		3	3
CO3	3	3	3	3	3	2	1	2	2	2	3		3	3

Mapping Strength: **Strong– 3** **Medium – 2** **Low – 1**

List of Experiments

Sl.No	CO	Experiment
PART – A CONVENTIONAL EXPERIMENTS		
1	CO1	Develop a program to calculate the temperature converter from degree to Fahrenheit. b) Develop a program to find the roots of quadratic equations
2	CO1	a) Develop a program to find whether a given number is prime or not. b) Develop a program to find key elements in an array using linear search.
3	CO1	Given age and gender of a person, develop a program to categories senior citizen (male& female).
4	CO1, CO3	a) Generate Floyd's triangle for given rows. b) Develop a program to find the transpose of a matrix.
5	CO2	Develop a program to concatenate two strings, find length of a string and copy one string to other using string operations
6	CO2	Develop a modular program to find GCD and LCM of give numbers.
7	CO2	Develop a program to declare the structure of employees and display the employee records with higher salary among two employees.
8	CO2, CO1	a) Develop a program to add two numbers using the pointers to the variables. b) Develop a program to find the sum of digits of a give number.
9	CO3	Develop a program to perform matrix Multiplication.
10	CO2	Develop a program to create an array of structures to store book details and check whether a specific book, as requested by the user, is available or not.

Text book:

1. Programming in ANSIC,9e, E Balaguru swamy, Tata McGraw Hill Education

Reference books:

1. PROGRAMMING IN C, Reema Thareja, Oxford University, Third Edition,2023.

2. The 'C' Programming Language, Brian W.

    Kernighan and Dennis M. Ritchie, Second

    Edition, Prentice Hall of India, 2015

Online Resources:

1. Introduction to Programming in C
   [https://onlinecourses.nptel.ac.in/noc23_cs02/preview]
2. C for Everyone: Programming Fundamentals [https://www.coursera.org/learn/c-for-everyone]
3. Computer Programming Virtual Lab[https://cse02-iiith.vlabs.ac.in/exp/pointers/]
4. CProgramming: The ultimate way to learn the fundamentals of
   the C language [https://www.pdfdrive.com/c-programming-the-ultimate-way-to- learn-the- \fundamentals-of-the-c- language-e187584209.html
5. C Programming :The Complete Reference
   [https://viden.io/knowledge/programming-in-c-language/attachment/28313/c-the-complete-reference-herbert-schildt-4th-edition-pdf/preview]
    E learning.vtu.ac.in/econtent