**FACULTY OF COMPUTER SCIENCE**
**Master Of Computer Application (Integrated) (Sem-II)**
In Effect from Academic Year 2023-24

SANKALCHAND PATEL
UNIVERSITY
।। अथातो ज्ञानजिज्ञासा ।।

| Branch Name: | IMCA |
|---|---|
| **ProgramCode:** | **CS301** |
| **CourseName:** | Fundamental of Programming-II Practical |
| **CourseCode:** | **1CS3010201P** |
| **Pre-requisite Course:** | Basic knowledge of C Programming |

### Course Objectives:

1. To be able to understand and use pointers in C Programs.
2. To be able to create user defined data types in C
3. To be able to write C applications which can do input/output on files.

### Teaching and Examination Scheme:

| Teaching Scheme (Hours per week) | | | | Evaluation Scheme (Marks) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Theory (Marks) | | Practical (Marks) | | |
| Lecture (L) | Tutorial (T) | Practical (P) | Credit | University Assessment | Continuous Assessment | University Assessment | Continuous Assessment | Total (Marks) |
| | | 3 | 3 | - | - | 25 | 25 | 50 |

### Inductive Practical List

1. Write a C program to sum of Natural Numbers Using Recursion.
2. Write a C program to Display Fibonacci series using Recursion.
3. Write a program in C to demonstrate the use of & (address of) and *(value at address) operator.
4. Write a program in C to add two numbers using pointers.
5. Write a program in C to add numbers using call by reference.
6. Write a program in C to find the maximum number between two numbers using a pointer.
7. Write a program in C to store n elements in an array and print the elements using a pointer.
8. Write a program in C to print all permutations of a given string using pointers.
9. Write a program in C to find the largest element using Dynamic Memory Allocation.
10. Write a program in C to calculate the length of the string using a pointer.
11. Write a program in C to swap elements using call by reference.
12. Write a program in C to find the factorial of a given number using pointers
13. Write a program in C to count the number of vowels and consonants in a string using a pointer.
14. Write a program in C to sort an array using Pointer.
15. Write a program in C to compute the sum of all elements in an array using pointers.
16. Write a program in C to print all the alphabets using a pointer.
17. Write a program in C to print a string in reverse using a pointer.

18. Write a C Program to Store Information of a Student Using Structure.

19. Write a C Program to Add Two Distances (in inch-feet) System Using Structures

20. Write a C Program to Calculate Difference Between Two Time Periods

21. Write a C Program to Store Information Using Structures with Dynamically Memory Allocation

22. Create a union that stores an array of 21 characters and 6 ints (6 since 21 / 4 == 5, but 5 * 4 == 20 so you need 1 more for the purpose of this exercise), you will set the integers to 6 given values and then print out the character array both as a series of chars and as a string.

23. Write a program in C to create and store information in a text file.

24. Write a program in C to read an existing file.

25. Write a program in C to write multiple lines in a text file.

26. Write a program in C to read the file and store the lines into an array.

27. Write a program in C to Find the Number of Lines in a Text File.

28. Write a program in C to find the content of the file and number of lines in a Text File.

29. Write a program in C to count a number of words and characters in a file.

30. Write a program in C to delete a specific line from a file.

31. Write a program in C to replace a specific line with another text in a file.

32. Write a program in C to copy a file in another name.

33. Write a program in C to merge two files and write it in a new file.

34. Write a C program to get the rightmost bit of any input.

35. Write a C program to remove the leftmost bit of any input.

36. Write a C program to remove the first bit of any input, and add it to the right.

37. Write a C program to rotate bits of a given number.

38. Write a C program to convert decimal to binary number system using bitwise operator.

39. Write a C program to swap two numbers using the bitwise operator.

40. Write a C program to check whether a number is even or odd using a bitwise operator.

**Text Books:**

1. Programming in ANSI C, Balagurusamy, Tata McGraw-Hill

**Reference Books:**

1. Programming in ANSI C, By E Balaguruswami, Tata McGraw-Hill Publishing Company Limited.
2. Programming with C, By Bayron Gottfried, Tata McGraw-Hill Edition.
3. Let Us C, By Yashavant Kanetkar, BPB Publications.
4. Working with C, By Yashavant Kanetkar, BPB Publications.

**List of Open Source Software/learning website:**

1. www.w3school.com

3. www.tutorialspoint.com
4. www.geeksforgeeks.org
5. www.javatpoint.com

**Course Learning Outcomes (CLO): On completion of this course, the students will be able to:**

| CLO | Description | Bloom's Taxonomy Level |
| --- | --- | --- |
| CLO1 | To have fundamental knowledge on User define function | 2 Understanding |
| CLO2 | To Develop modular applications using the C programming language. | 1 Remembering<br>2 Understanding |
| CLO3 | Demonstrate the ability to write C programs using pointers, structures, unions and arrays. | 2   Understanding,<br>3   Applying,<br>4   Analyze |
| CLO4 | Implements different operation using file management and command line argument | 3 Applying<br>4 Analyze<br>5 Evaluate<br>6 Creating |
| CLO5 | Implement user defined function and pointer | 3 Applying<br>4 Analyze<br>5 Evaluate<br>6 Creating |
| CLO6 | Enable effective use of structure and pointer | 3 Applying<br>4 Analyze<br>5 Evaluate<br>6 Creating |

**Mapping of CLOs with POs & PSOs**

| Course LearningOutcomes | Program Outcomes (POs) | | | | | | | | | | | | Program Specific Outcomes(PSOs) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CLO1 | H | M | L | | H | M | | M | L | | L | M | M | M |
| CLO2 | M | | H | | M | | H | | L | | M | | M | M |
| CLO3 | | L | M | M | | L | | L | H | M | L | M | M | L |
| CLO4 | | M | M | | M | | | L | | L | M | | M | |
| CLO5 | M | | H | | M | | | L | M | | M | L | L | M |
| CLO6 | M | M | L | | L | | M | | L | | L | H | L | L |

**H: High, M: Medium, L: Low**