CSE-104 outline

Marking policy:

First 1.30 hour – Discussion on particular lab topic and practice session.

Second 1.30 hour – Daily evaluation.

Topics will cover in this course:

Topics	# of classes
Data Types	1
Conditional logic	2
Loop/Nested Loop	3
Array + function	4
Structure	2
Pointer	1

Sample Problems:

Data Types-Lab 1:

1. **Write a C program to enter two numbers and find their sum.**
2. **Write a C program to enter two numbers and perform all arithmetic operations.**
3. **Write a C program to enter length and breadth of a rectangle and find its perimeter.**
4. **Write a C program to enter length and breadth of a rectangle and find its area.**
5. **Write a C program to enter radius of a circle and find its diameter, circumference and area.**
6. **Write a C program to enter length in centimeter and convert it into meter and kilometer.**
7. **Write a C program to enter temperature in °Celsius and convert it into °Fahrenheit.**
8. **Write a C program to enter temperature in Fahrenheit(°F) and convert it into Celsius(°C)**
9. **Write a C program to convert days into years, weeks and days.**
10. **Write a C program to find power of any number x ^ y.**

Conditional Logic- Lab 2 , Lab 3:

1. **Write a C program to find maximum between two numbers.**
2. **Write a C program to find maximum between three numbers.**
3. **Write a C program to check whether a number is even or odd.**
4. **Write a C program to check whether a year is leap year or not.**
5. **Write a C program to check whether a number is negative, positive or zero.**
6. **Write a C program to check whether a number is divisible by 5 and 11 or not.**
7. **Write a C program to count total number of notes in given amount.**
8. **Write a C program to check whether a character is alphabet or not.**
9. **Write a C program to input any alphabet and check whether it is vowel or consonant.**
10. **Write a C program to input any character and check whether it is alphabet, digit or special character.**
11. **Write a C program to check whether a character is uppercase or lowercase alphabet.**
12. **Write a C program to input week number and print week day.**
13. **Write a C program to input month number and print number of days in that month.**
14. **Write a C program to input angles of a triangle and check whether triangle is valid or not.**
15. **Write a C program to input all sides of a triangle and check whether triangle is valid or not.**
16. **Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.**
17. **Write a C program to find all roots of a quadratic equation.**
18. **Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:**

    Percentage >= 90% : Grade A
    Percentage >= 80% : Grade B
    Percentage >= 70% : Grade C
    Percentage >= 60% : Grade D

Percentage >= 40% : Grade E

Percentage < 40% : Grade F

19. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000 : HRA = 20%, DA = 80%

Basic Salary <= 20000 : HRA = 25%, DA = 90%

Basic Salary > 20000 : HRA = 30%, DA = 95%

20. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:

For first 50 units Rs. 0.50/unit

For next 100 units Rs. 0.75/unit

For next 100 units Rs. 1.20/unit

For unit above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill

Loop/Nested Loop-Lab 4 , Lab 5 , Lab 6:

1. **Write a C program to print all natural numbers from 1 to n. - using while loop**
2. **Write a C program to print all natural numbers in reverse (from n to 1). - using while loop**
3. **Write a C program to print all alphabets from a to z. - using while loop**
4. **Write a C program to print all even numbers between 1 to 100. - using while loop**
5. **Write a C program to print all odd number between 1 to 100.**
6. **Write a C program to print sum of all even numbers between 1 to n.**
7. **Write a C program to print sum of all odd numbers between 1 to n.**
8. **Write a C program to print table of any number.**
9. **Write a C program to enter any number and calculate sum of all natural numbers between 1 to n.**
10. **Write a C program to find first and last digit of any number.**
11. **Write a C program to count number of digits in any number.**
12. **Write a C program to calculate sum of digits of any number.**
13. **Write a C program to calculate product of digits of any number.**
14. **Write a C program to swap first and last digits of any number.**
15. **Write a C program to find sum of first and last digit of any number.**
16. **Write a C program to enter any number and print its reverse.**
17. **Write a C program to enter any number and check whether the number is palindrome or not.**
18. **Write a C program to find frequency of each digit in a given integer.**
19. **Write a C program to enter any number and print it in words.**
20. **Write a C program to print all ASCII character with their values.**
21. **Write a C program to find power of any number using for loop.**
22. **Write a C program to enter any number and print all factors of the number.**
23. **Write a C program to enter any number and calculate its factorial.**
24. **Write a C program to find HCF (GCD) of two numbers.**
25. **Write a C program to find LCM of two numbers.**

26. **Write a C program to check whether a number is Prime number or not.**
27. **Write a C program to check whether a number is Armstrong number or not.**
28. **Write a C program to check whether a number is Perfect number or not.**
29. **Write a C program to check whether a number is Strong number or not.**
30. **Write a C program to print all Prime numbers between 1 to n.**
31. **Write a C program to print all Armstrong numbers between 1 to n.**
32. **Write a C program to print all Perfect numbers between 1 to n.**
33. **Write a C program to print all Strong numbers between 1 to n.**
34. **Write a C program to enter any number and print its prime factors.**
35. **Write a C program to find sum of all prime numbers between 1 to n.**
36. **Write a C program to print Fibonacci series up to n terms.**

Array + Function– Lab 7 , Lab 8 , Lab 9 , Lab 10:

1. **Write a C program to find second largest element in an array.**
2. **Write a C program to count total number of even and odd elements in an array.**
3. **Write a C program to count total number of negative elements in an array.**
4. **Write a C program to copy all elements from an array to another array.**
5. **Write a C program to insert an element in an array.**
6. **Write a C program to delete an element from an array at specified position.**
7. **Write a C program to print all unique elements in the array.**
8. **Write a C program to count total number of duplicate elements in an array.**
9. **Write a C program to delete all duplicate elements from an array.**
10. **Write a C program to count frequency of each element in an array.**
11. **Write a C program to merge two array to third array.**
12. **Write a C program to find reverse of an array.**
13. **Write a C program to put even and odd elements of array in two separate array.**
14. **Write a C program to search an element in an array.**
15. **Write a C program to sort array elements in ascending order.**
16. **Write a C program to sort array elements in descending order.**
17. **Write a C program to sort even and odd elements of array separately.**
18. **Write a C program to add two matrices.**
19. **Write a C program to subtract two matrices.**
20. **Write a C program to perform Scalar matrix multiplication.**
21. **Write a C program to multiply two matrices.**
22. **Write a C program to check whether two matrices are equal or not.**
23. **Write a C program to find sum of main diagonal elements of a matrix.**
24. **Write a C program to find sum of minor diagonal elements of a matrix.**
25. **Write a C program to find sum of each row and column of a matrix.**
26. **Write a C program to interchange diagonals of a matrix.**
27. **Write a C program to find upper triangular matrix.**
28. **Write a C program to find lower triangular matrix.**

Structure-Lab 11, Lab 12:

- **Make a data repository/ database like library management, bank management, result management on a very minimal scale.**

Pointer-Lab 13:

1. **How to use pointer**
2. **Application of pointer**
3. **Why we use it**
4. **Good side / Downside**
5. **Create a simple linked list**