JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF MECHANICAL ENGINEERING

I Year - I Semester		L	T	P	C
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PROGRAMMING FOR PROBLEM SOLVING USING C LABORATORY

Course Objectives:
1) Apply the principles of C language in problem solving.
2) To design flowcharts, algorithms and knowing how to debug programs.
3) To design & develop of C programs using arrays, strings pointers & functions.
4) To review the file operations, preprocessor commands.

Exercise 1:
1. Write a C program to print a block F using hash (#), where the F has a height ofsixcharactersand width of five and four characters.
2. Write a C program to compute the perimeter and area of a rectangle with a height of 7inchesand width of 5 inches.
3. Write a C program to display multiple variables.

Exercise 2:
1. Write a C program to calculate the distance between the two points.
2. Write a C program that accepts 4 integers p, q, r, s from the user where r and s are positive and p is even. If q is greater than r and s is greater than p and if the sum of r and s is greater than the sum of p and q print "Correct values", otherwise print "Wrong values".

Exercise 3:
1. Write a C program to convert a string to a long integer.
2. Write a program in C which is a Menu-Driven Program to compute the area of the variousgeometrical shape.
3. Write a C program to calculate the factorial of a given number.

Exercise 4:
1. Write a program in C to display the n terms of even natural number and their sum.
2. Write a program in C to display the n terms of harmonic series and their sum.$1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n$ terms.
3. Write a C program to check whether a given number is an Armstrong number or not.

Exercise 5:
1. Write a program in C to print all unique elements in an array.
2. Write a program in C to separate odd and even integers in separate arrays.
3. Write a program in C to sort elements of array in ascending order.

Exercise 6:
1. Write a program in C for multiplication of two square Matrices.
2. Write a program in C to find transpose of a given matrix.

Exercise 7:
1. Write a program in C to search an element in a row wise and column wise sorted matrix.
2. Write a program in C to print individual characters of string in reverse order.

Exercise 8:
1. Write a program in C to compare two strings without using string library functions.
2. Write a program in C to copy one string to another string.

Exercise 9:
1. Write a C Program to Store Information Using Structures with Dynamically Memory Allocation
2. Write a program in C to demonstrate how to handle the pointers in the program.

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Exercise 10:
1. Write a program in C to demonstrate the use of & (address of) and *(value at address) operator.
2. Write a program in C to add two numbers using pointers.

Exercise 11:
1. Write a program in C to add numbers using call by reference.
2. Write a program in C to find the largest element using Dynamic Memory Allocation.

Exercise 12:
1. Write a program in C to swap elements using call by reference.
2. Write a program in C to count the number of vowels and consonants in a string using a pointer.

Exercise 13:
1. Write a program in C to show how a function returning pointer.
2. Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using malloc( ) function.

Exercise 14:
1. Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc( ) function. Understand the difference between the above two programs
2. Write a program in C to convert decimal number to binary number using the function.

Exercise 15:
1. Write a program in C to check whether a number is a prime number or not using the function.
2. Write a program in C to get the largest element of an array using the function.

Exercise 16:
1. Write a program in C to append multiple lines at the end of a text file.
2. Write a program in C to copy a file in another name.
3. Write a program in C to remove a file from the disk.

Course Outcomes:
By the end of the Lab, the student

1) Gains Knowledge on various concepts of a C language.
2) Able to draw flowcharts and write algorithms.
3) Able design and development of C problem solving skills.
4) Able to design and develop modular programming skills.
5) Able to trace and debug a program