

Regulation GRBT-20	Godavari Institute of Engineering & Technology (Autonomous)	I B.TechII Sem.			
CourseCode	Fundamentals of Computer Programming Lab (Common to Mech, Min, Civil, AME, EEE, PET)				
Teaching	Totalcontacthours-36	L	T	P	C
Prerequisite(s): Basic knowledge of Mathematics, Logical Ability		0	0	3	1.5

Course Objective(s):

- To provide exposure to problem solving through programming.
- To train the student to the basic concepts of C-programming language.
- The course involves a lab component which is designed to give the student hands-on experience with the concepts.

Course Outcome(s):

After successful completion of this course, a student will be able to-

- CO-1:** Obtain the knowledge about different languages used in computer programming and basic terminology used in the computer programming.
- CO-2:** Write algorithm, flow chart, and structure of C program and make use of different C tokens inside C program.
- CO-3:** Develop program by using Control structure, different looping and Jump statement.
- CO-4:** Implement applications of Array, Structure and String inside the program.
- CO-5:** Obtain knowledge about accessing the memory in the program and also to develop the program by using different types of function calls.

Programs:

1. Write a C Program to
 - a) Calculate the area of triangle using the formula
 $\text{Area} = (s(s-a)(s-b)(s-c))^{1/2}$, where $s = (a+b+c)/2$
 - b) To find the largest of three numbers using ternary operator.
 - c) To swap two numbers with and without temporary variable.
2. Write a C program that perform the following operations:
 - a) Reading and writing a complex number
 - b) Addition of two complex numbers
3. Write a C program to
 - a) Find the roots of a quadratic equation.
 - b) Take two integer operands and one operator form the user, Performs the operation and then prints the result. (Consider the operators +, -, *, /, % and use Switch Statement)
4. Write a C Program to print the following patterns
 - a) Floyd's triangle
 - b) Pyramid


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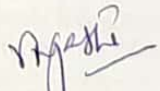
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5. Write a C program to
 - a) Check whether the given number is Armstrong number or not.
 - b) Check whether the given number is palindrome or not.
 - c) A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.
 - d) Generate all the prime numbers between 1 and n, where n is a value supplied by the user.
6. Write a C Program to print the multiplication table of a given number n up to a given value, where n is entered by the user.
7. Write a C program to
 - a) Examples which explore the use of structures, union and other user defined variables.
 - b) Declare a structure for calculating the percentage achieved by 3 students, by considering the structure elements as name, pin no, mark1, mark2, mark3.
8. Write the C programs for the following using arrays
 - a) Matrix addition
 - b) Matrix Multiplication
9. Write C Program for performing the following string operations
 - i. length of a string
 - ii. reverse a string
 - iii. append a string to another string
 - iv. compare two strings
10. Write a C Programs for the following string operations with and without using the built in functions
 - a) To reverse a string using pointers.
 - b) To concatenate two strings by using pointer.
11. Write a C program to find the factorial of a given integer using function recursion.
12. Write C programs to
 - a) Find the area of triangle by using call by value and call by reference concepts.
 - b) Pointer based function to exchange value of two integers using passing by address.


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CO-PO Mapping:

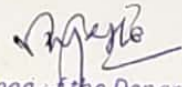
(1: Slight [Low]; 2: Moderate[Medium]; 3: Substantial[High], '-' : No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	-	-	-	-	-	-	-	-	-	-	-
CO2	-	2	3	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-
CO4	-	-	2	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	3	-	-	-	-	-	-	-



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