GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 1st Semester
Branch: Software Development
Subject Name: Programming in C Lab
Subject Code: 21110206

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	**T**	**P**	**C**	ESE (E)	PA(M)	ESE(V)	PA(I)	
0	0	2	2	-	-	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Programming Fundamentals:

- Data Types: Concept of data types; Built-in data types -byte, short, int, long, float, double, char, string, boolean
- Variables: Need to use variable, declaring variables, variable naming convention, assigning value to variables;
- Integer object method: parseInt
- Double object method: parseDouble, parseFloat
- Control Structures: Decision Structure –if, if-else, switch; Looping Structure-while, do-while, for;

Programming Guidelines:

- General Concepts; Modular approach;
- Stylistic Guidelines: Clarity and simplicity of expressions and names; Comments, Indentation;
- Running and debugging programs, Syntax Errors, Run-Time Errors, Logical Errors;
- Problem Solving Methodology: Understanding of the problem, identifying minimum number of inputs required for output, breaking down problem into simple logical steps.

Content:

Sr. No.	Practical / Hands on Exercise	Hrs.
1	a. Write a program to print —HELLO WORLD. b. Write a program that reads two nos. from key board and gives their addition, subtraction, multiplication, division and modulo. c. Write a program to convert days into months and days	3
2	a. Write a program to select & print the largest of the three nos. using Nested-If-Else statement. b. Write a program to display multiplication table. c. Write a program to find sum of first N odd numbers. Ex. 1+3+5+7+………..+N.	3
3	a. Write a C Program to print following Patterns. * * * * * *	3

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With effective from academic year 2021-22

	* * * * b. Write a C Program to print following Patterns. 1 0 1 1 0 1 0 1 0 1 c. Write a C Program to print Pascal Triangle.	
4	a. Write a C Program for making basic calculator using switch statement. b. Write a C program to add two matrix. c. Write a C program to read array of integers and print it in reverse order	3
5	a. Write a C program to find length of string using strlen( ) function b. Write a C program to copy one string to another string. c. Write a C program find given string is palindrome or not using string library function.	3
6	a. Write a function power that computes x raised to the power y for integer x and y and returns double type value. b. Write a program that used user defined function Swap ( ) and interchange the value of two variable. c. Write a program to find factorial of a number using recursion.	3

7	a. Define a structure type, personal, that would contain person name, date of joining and salary. Using this structure, write a program to read this information for one person from the key board and print the same on the screen
	 b. Define a structure called cricket that will describe the following information:
	   i. Player name
	   ii. Team name
	   iii. Batting average
		3

8	a. Write a program using pointer and function to determine the length of string. b. Write a program using pointer to read an array if integer and print element in reverse order. c. Write a program using pointer to concate two strings.	3
9	a. Write a C program to illustrate reading files contents. b. Write a C program to illustrate writing in files. c. Write a C program to illustrate the use of fgets ( ) and fputs( )	3
10	a. Write a program that uses a table of integers whose size will be specified interactively at run time. b. Write a program to store a character string in block of memory space created by malloc and then modify the same to store a large string.	3
	Total	**42**

Suggested Specification table with Marks (Practical):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	25	25	10	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Bloom's Taxonomy)

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Reference Books:
1. Programming in ANSI C by Balagurusamy
2. Let Us C, by Yashwant Kanetkar

Course Outcomes:
At the end of this subject, students should be able to:
1. Apply basic programming principles using C language.
2. Apply basic C program structure in software development
3. To understand different control structures in C.
4. To understand basic of array and string functions.
5. To understand user-defined functions.
6. To understand pointer, structure, dynamic memory allocation and file management.