KU1DSCCSC101: FUNDAMENTALS OF PROGRAMMING WITH C

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
1	DSC	100-199	KU1DSCCSC101	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	2	-	35	65	100	1.5hrs.

Course Description:

Topics include variables, data types, functions, control structures, pointers, strings, arrays and ... Learn the C programming language and its fundamental programming concepts. Gain the knowledge to write simple C language applications and undertake future courses that assume some background in computer programming.

Course Prerequisite: NIL

Course Outcomes:

CO No.	Expected Outcome	Learning Domains
1	Identify the basic syntax and structure of the C programming language	U
2	Design algorithms and flow chart to write program.	A

3	Understand various program control structures	U, A
4	Use advanced programming constructs such as arrays and strings in programming	U, A, E
5	Design simple C programs using appropriate programming constructs such as looping statements, conditional statements and arrays.	A, E, C

Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	3			2			
CO 2		2					
CO 3	3	3	2				
CO 4	2	3	2				
CO 5	3	3		2			3

COURSE CONTENTS

Contents for Classroom Transaction:

MODULE	UNIT	DESCRIPTION	HOURS
		MODULE1: Introduction to C and Basic Programming constructs	
1	1	Introduction to C	15
		a) History and importance of C	
		b) Algorithamic thinking – algorithm, flow chart examples, advantages and disadvantages	
		c) Basic structure of C	
		d) Executing a C program	
	2	C tokens	
		a) Keywords	
		b) Constants	
		c) Operators	

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		Operators	
	3	a) Arithmetic	
		b) Relational	
		c) Logical	
		d) Assignment	
		b) Bitwise operator	
		c) Other operators	
	4	Data types and variables	
		a) Primitive data types	
		b) Variables	
		c) Declaration of variables	
		d) Initialization of variables	

2		**MODULE 2: Input/output operations**	
	1	Managing input and output operations	15
		a) Reading a character	
		b) Writing a character	
	2	Formatted input and formatted output operations	
		a) printf function	
		b) scanf function	
	3	Branching statements	
		a) Simple if	
		b) if…..else	
		c) else- if ladder	
		d) nested If	

		e) switch -case statement	

3	**MODULE 3:** looping control structures		**15**
	1	Do -while loop	
	2	While loop	

	3	For loop	
	4	Nesting of loop	
	5	Break and Continue Statement	

4	**MODULE 4: Introduction to arrays and string**		
	1	One Dimensional array : declaration and initialization	15
		Two Dimensional array: declaration and initialization	
	2	String: string declaration and initialization	
		String handling functions: strlen, strcat, strcpy, strcmp, strrev	

5	**Teacher Specific Module**	
	Directions	
	1. Program to find sum and average of three numbers 2. Program to print the size of all fundamental data types 3. Program to find largest among three numbers using conditional operator 4. Program to check the number is odd or even using if statement 5. Program to print the grade of a student using nested if 6. Program to perform arithmetic operations using switch statement 7. Program to find the roots of a quadratic equation 8. Program to find the factorial of a given number 9. Program to generate the Fibonacci series 10. Program to find sum of n numbers using array 11. Program to sort n numbers using array 12. Program to check a given string is palindrome or not 13. Program to generate prime numbers with in a range 14.Program to implement any five built -in string function 15. Program to perform any Matrix operation	15

Essential Readings:

1.*E.*Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill

2.YashavantP.Kanetkar, Let Us C, 16th Edition, BPB

Suggested Readings:

1. Brian W.Kernighan and Dennis M. Ritchie, C Programming Language, The Prentice Hall of India
2. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-H

Assessment Rubrics:

Evaluation Type			**Marks**	**Evaluation Type**			**Marks**	**Total**
Lecture			**75**	**Practical**			**25**	**100**
a)	**ESE**		**50**	a)	**ESE**		**15**	
					Program code and execution		**8**	
					Output		**3**	
					Viva		**2**	
					Modification		**2**	
b)	**CCA**		**25**	b)	**CCA**		**10**	
	i	Test Paper	5		i	Punctuality	3	
		Model exam	10					
	ii	Assignment/ Book-Article review /field report	5		ii	Model exam	4	
	iii	Seminar/ Viva-Voce	5		iii	Record	3	