

DSMDC114 Introduction to Programming I

Semester: I	Course Title: Introduction to Programming I	Credit: 4
Course Code: DSMDC114		(3 T + 1 P)

Course Outcomes: On successful completion of the course the learner will be able to

CO	COGNITIVE ABILITIES	COURSE OUTCOMES
CO 1	REMEMBERING	Enumerate core concept of C Programming.
CO 2	UNDERSTANDING	Explain C language basics, including its history and structure.
CO 3	APPLYING	Develop algorithms and flowcharts for basic tasks
CO 4	ANALYSING	Identify and compare different operators and their precedence.
CO 5	EVALUATING	Debug C programs and understand the roles of different program files.
CO 6	CREATING	Create C programs using decision-making and looping constructs.

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

Unit	Detailed Syllabus	Teaching Hours
I	<p>Fundamental of Algorithms: Introduction, Algorithm Development Method, Algorithms for basic human general activities focused on understanding basic steps, Basic number and arithmetic Operation, Looping & Control flow statements, Series computation, Introduction to flowchart, Symbols for input/output, Processes, Decision, Begin/End, Representation of algorithms by Flowchart.</p> <p>Overview of C: Brief history of C, Importance of C, Features of 'C' language, Basic Structure of C Programs, Programming Style, Steps to execute 'C' Program, Understanding the terminologies: Source Program, Object Program, Executable Program, Linker, Loader, Debug, Compilation process, Interpreter.</p> <p>Constants, Variables and Data Types: Character set, C tokens, keywords and identifiers, constants, variables, data types, declaration of variables, assigning value to the variable, defining symbolic constants.</p>	15
II	<p>Operators and Expression: Operators - arithmetic, relational, logical, assignment, increment-decrement, conditional, bit-wise and special, Arithmetic expressions, evaluation of expressions, precedence of arithmetic operators, type conversions in expressions, operator precedence and associativity, mathematical functions.</p>	15

	Managing Input and Output Operators: Reading and writing a character formatted input-output. Decision-Making Decision making with IF statement, simple IF statement, the IF-ELSE statement	
III	Decision-Making Nesting of IF ... ELSE statements, the ELSE IF ladder, Switch statement, ternary (?:) operator, Go-To statement. Looping: Looping statements – WHILE, DO-WHILE and FOR, Nesting and Jumps in loops, Break & Continue.	15
IV	Practical Component <ul style="list-style-type: none"> • Write a program to find out the largest of three numbers by using the logical operators. • Write a program to find out the largest of three numbers by using if-else. • Write a program to find the roots of a quadratic equation using function and switch statements. • Write a program to find out the sum of the digits of a number. • Write a program to find out whether the entered no is Prime or not. • Write a program in which if and else both blocks get their execution. • Additional programs 	15

Suggested Reference Books:

1. B.S. Gottfried - Programming with C - Schaum's Outline Series - Tata McGraw Hill 2nd Edition - 2004.
2. E. Balagurusamy - Programming in ANSI C - Second Edition - Tata McGraw Hill- 1999.
3. Kernighan, Brian, and Dennis Ritchie. The C Programming Language
4. Forouzan, B. A., & Gilberg, R. F. (2007). A Structured Programming Approach Using C (3rd ed.). Cengage Publication.
5. Kernighan, B. W., & Ritchie, D. M. (2015). The C Programming Language (2nd ed.). Prentice Hall of India.
6. Gottfried, B. (2017). Schaum's Outline of Programming with C (3rd ed.). McGraw Hill Book.