C Language Syallabus :   **- By GharSeCode (GSC)**

Course Title: Programming in C

Course By : GSC (Ghar Se Code)
Duration: 3 Hrs
Code Spirit : Hard work beats talent when talent doesn't work hard

Topics	Detailed Overview
Introduction to C Programming	What is Programming?
	Structure of a C Program
	Compilation and Execution Process
	Comments
	Header Files
	Features of C Language
Variables, Constants, and Data Types	Character Set & C Tokens
	Keywords & Identifiers
	Data Types (Basic, Derived, User-defined)
	Format Specifiers
	Type Conversion & Typecasting
	Variables & Constants
Operators and Expressions	Arithmetic Operators
	Relational Operators
	Logical Operators
	Assignment Operators
	Increment and Decrement Operators
	Conditional (Ternary) Operator
	Bitwise Operators
	Operator Precedence & Associativity
Input and Output Operations	Formatted Input: scanf()
	Character Input/Output: getchar(), putchar()
	String Input/Output: gets(), puts()
	Formatted Output: printf()
Control Structures	Decision Making Statements:
	if...else
	Nested if...else
	switch Statement
	Looping Statements:
	while
	do...while
	for

	Nested Loops
	Jump Statements:
	break
	continue
	goto
Functions in C	Function Declaration, Definition, and Calling
	Return Statement
	Recursion
	Scope and Lifetime of Variables
	Function Parameters (Arguments)
Arrays	Introduction to Arrays
	Two-Dimensional Arrays (Matrix)
	Array Operations (Traversal, Insertion, Deletion)
	Passing Arrays to Functions
	One-Dimensional Arrays
Strings	Declaring and Initializing Strings
	Input & Output of Strings
	String Manipulation Functions (strlen(), strcpy(), strcat(), strcmp(), etc.)
	Array of Strings
	Pointers and Strings
Pointers	Introduction to Pointers
	Pointer Arithmetic
	Pointers and Arrays
	Pointers to Functions
	Dynamic Memory Allocation: malloc(), calloc(), realloc(), free()
	Pointer Declaration and Initialization
Structures and Union	Declaring StructuresArrays of Structures
	Nested Structures
	Pointers to Structures
	Union Concept
	Difference between Structures and Unions
	Enumerations (enum)
	Accessing Structure Members
File Handling	Reading and Writing to a File
	Closing a File
	File Modes (r, w, a, rb, wb, etc.)
	Working with Text Files
	Working with Binary Files
	File Functions (fopen(), fclose(), fgetc(), fputc(), fprintf(), fscanf(), etc.)

	Defining and Opening a File