C Programming Syllabus (30 Days)

Phase 1: Basics of C (Days 1-5)

- Day 1: Introduction to C, Structure of a C program, Compilation process
- Day 2: Keywords, Identifiers, Variables, Constants, Data Types
- Day 3: Input/Output: printf(), scanf()
- Day 4: Operators: Arithmetic, Relational, Logical, Assignment, Unary
- Day 5: Type conversion, Precedence & Associativity

Phase 2: Control Flow (Days 6-9)

- Day 6: Conditional Statements: if, if-else, nested if
- Day 7: switch-case, goto, break, continue
- Day 8: Loops: for, while, do-while
- Day 9: Pattern printing programs (practice logic building)

Phase 3: Functions & Storage Classes (Days 10-13)

- Day 10: Function basics, types of functions, return values
- Day 11: Function arguments: Call by Value vs Call by Reference
- Day 12: Recursion
- Day 13: Storage Classes: auto, static, extern, register

Phase 4: Arrays & Strings (Days 14-18)

- Day 14: 1D Arrays: Declaration, Initialization, Traversal
- Day 15: 2D Arrays & Matrix operations
- Day 16: Introduction to Strings: Declaration, Input/Output
- Day 17: String functions: strlen, strcpy, strcmp, strcat
- Day 18: Practice problems: Palindrome, Anagram, Frequency count

Phase 5: Pointers (Days 19-23)

- Day 19: Introduction to Pointers, Pointer Arithmetic
- Day 20: Pointers & Arrays, Pointers & Strings
- Day 21: Pointers to Pointers
- Day 22: Functions and Pointers
- Day 23: Practice problems using pointers

Phase 6: Structures & Unions (Days 24-26)

- Day 24: Structures: Declaration, Initialization, Access
- Day 25: Arrays of Structures, Nested Structures
- Day 26: Unions vs Structures, Typedef

Phase 7: File Handling (Days 27-28)

- Day 27: File types, Opening/Closing files, fopen, fclose
- Day 28: Reading/Writing: fgetc, fputc, fscanf, fprintf

Phase 8: Practice & Mini Project (Days 29-30)

- Day 29: Solve 5-6 mixed C problems on logic, arrays, strings
- Day 30: Mini Project: Student Record System / Library Management