

C- Language Course Content

Unit-1: Introduction

- Introduction to programming languages
- Types of Languages
- Brief History of C Programming Language
- 'C' Program development life cycle
- Role of interpreter
- Role of compiler
- Structure of a 'C' Program
- Writing C Programs
- Building an Executable Version of a C Program
- Debugging a C Program
- Running a C Application Program

Unit-2: Keywords

- Keywords and Identifiers
- Operators
- Variables
- Data Types
- Constants
- Precedence of Operators
- Scope and Lifetime of Variables

Unit-3: Control Statements

- Intro for Control Statements
- if.....else Statement
- if...else ladder
- Nesting of if.....else Statements
- Switching Statements
- Programming Exercises on Control statements

Unit-4: Looping Statements

- Introduction to loops
- Range Based Loops
- Conditional Based Loops
- do-while Statement
- while statement
- for Statements
- break statements
- continue statements

Unit-5: Arrays

- Introduction of Array
- Arrays Declaration
- Arrays Initialization
- Sample Programs using Arrays
- One - D Array
- Two - D Array
- Multidimensional Array

Unit-6: String Handling

- Introduction to Strings
- Implementing String Variables
- String Handling Functions
- Programs on Strings

Unit-7: Functions

- Introduction to Functions
- Functions Basics
- Advantages of Functions
- Pre-defined Functions
- User-defined Functions
- Function Parameters
- Recursion



Unit-8: Pointers

- Need of Pointers
- Types of Pointers
- Pointer Expression
- Arrays of Pointers
- Pointers and Functions

Unit-9: Structures & Unions

- Need of Structure
- Advantage of Structure
- Defining a Structure
- Size of Structure
- Arrays of Structures
- Structures and Functions
- Introduction of Unions
- Defining Unions
- Difference between Structure and Unions

Unit-10: File Handling using 'C'

- What is a Stream?
- Opening and Closing File
- Input / Output operations on File
- Random Access to Files
- Command Line Arguments

Unit-11: Memory Allocation

- Concept of Dynamic Allocation
- Implementing Malloc and Calloc Functions
- Releasing the free space

Unit-12: Searching and Sorting

- Linear Search
- Iterative Binary Search
- Recursive Binary Search
- Bubble Sort
- Selection Sort
- Insertion Sort
- Quick Sort
- Merge Sort

Unit-13: Data Structures

- Stack
- Queue
- Linked List
- Single Linked List
- Double Linked List
- Trees