

# C Programming

**Course Duration: 30 Hours**

## Module 1: C Language Basics

- History of C
- Structure Oriented Programming Concepts
- Hello World Program
- Variables and constants
- Operators in C

## Module 3: Iterative Statement

- For Loop
- While Loop
- Do-while loop
- Break and continue

## Module 5: 1D, 2D Arrays

- One-dimensional arrays
- Two-dimensional arrays
- Working with adding and removing data from the arrays
- Max, Min with arrays

## Module 7: Sorting Techniques

- Bubble Sort
- Insertion Sort
- Selection Sort
- Quick Sort
- Merge Sort

## Module 9: Dynamic Memory Allocation

- malloc()
- calloc()
- free()
- realloc()

## Module 11: Files

- Creating a new file
- Opening an existing file
- Reading from file
- Writing to a file
- Moving to specific location in a file
- Closing a file

## Module 2: Selection Control Statements

- If Statement
- Switch Statement
- Conditional Operator Statement
- Goto Statement

## Module 4: Functions

- Predefined Function
- Create Function
- Call a Function

## Module 6: Pointers

- Introduction to pointers
- Pointer to variables
- Getting address through pointers
- Pointers to arrays
- Arrays manipulations using pointers
- Call by reference functions

## Module 8: String Handling

- strcpy()
- strlen()
- strlwr()
- strupr()

## Module 10: Structures and Union

- Introduction to Structures and Union
- Defining Structures
- Defining unions
- Difference between structures and unions

