

# C PROGRAMMING

Duration: - 18 Weeks

## SUBJECT OFFERED

### 1. Course Contents

- Programming Logic and Environment.
- Programming Language Classification.
- Machine Language Assembly Language.
- High Level Language.
- Assemblers.
- Compilers.
- Interpreters.

### 2. Fundamentals of 'C'

- Overview of 'C'.
- History of 'C'.
- Concept of Procedure Oriented Programming.
- Structure of 'C'.
- Basic Syntax.

### 3. Structure of a 'C' Program / Constants / Data Types / Variable Types

- Data Types: - Int, Float, Char, Double, Void.
- Typedef.
- Enumeration.

### 4. Operators and Expression

- Arithmetic Operator.
- Relational Operator.
- Logical Operator.
- Ternary Operator.
- Assignment Operator.
- Arithmetic and Logical Expression.

### 5. Control Constructs

- Branching / Condition Checking if condition / if-else / if elseif-else / switch case.
- Integration / Looping for loop / While Loop / Do while Loop.

### 6. Working with Strings

- Using Various Functions in Strings.

### 7. Arrays / Array Declaration

- Single Dimensional Array.
- Double Dimensional Array.
- Multiple Dimensional Array.

- Passing Array to the Function.

## 8. Functions in 'C'

- Function Declaration.
- Function Calling.
- Function Definition.
- Function Arguments.
- Returning value from Function.
- Call by Value.
- Call by Reference.

## 9. Structures

- Basic of Structures.
- Declaring Structures.
- Referencing Structure Elements.
- Array of Structures.
- Passing Structures to Functions.

## 10. Pointers in 'C'

- Declaring and Initializing Pointers.
- Null Pointers.
- Pointer Referencing / Arithmetic / Comparison.
- Pointers VS Arrays.
- Array of Pointers.
- Passing Pointers to Function.
- Pointers to Pointers.

## 11. Unions

- Declarations Union.
- Difference Between Union & Structures.

## 12. Dynamic Memory Allocation

- Using Malloc and Alloc.

## 13. C Pre-Processor

- #Define.
- #Undef.
- #Include.
- #if, #else, #elseif, #ifdef and #ifndef.

## 14. File Handling

- File Accessing Functions.
- Manipulation Text and Binary Files.

## 15. C Standard Library Functions

- Math.h, Stdio.h, String.h

