

# C & C++ SYLLABUS

**Hi Folks,**

Oranium Tech introducing some amazing content on C & C++. Seeking the best Training Institution for C & C++ Training in Chennai? Then, join Oranium Tech. Our C & C++ Mentors at Oranium Tech helps you to get well-versed with the key concepts such as Data Structures, Algorithms, Loops & Conditional Statements, References, Lambdas, Operators, and Debugging codes proficiently and apply the problem-solving techniques in real-time.



## Programming in 'C'

### 1) Introduction of Programming Languages

- Types of Languages
- Evolution of 'C' Language
- Structure of a 'C' Program
- 'C' Program development life cycle
- Executing and Debugging a 'C' Program

### 2)'C' Tokens

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

### 3)Control Statement and Expressions

- Decision Making using if statement
- Types of if ...else block
- Switch case Block
- Arithmetic Expressions
- Evaluation of Expressions
- GOTO statement

### 4)Looping

- Concept of Loop
- For loop
- While loop
- Do while loop Jumping in Loop
- break and continue statement

### 5)Arrays and String

- Introduction of Array
- One - D Array
- Two - D Array
- Multidimensional Array
- Dynamic Arrays
- Implementing String Variables
- String handling Functions

### 6)Functions

- Concept of Function
- User defined Function
- System Defined Function
- Types of parameter passing in function

### 7)Pointers

- Need of Pointers
- Types of Pointers
- Pointer Expression

- Arrays of Pointers
- Pointers and Functions

### **8)Structure and Unions**

- Need of Structure
- Implementing Structure Variable
- Arrays of Structure
- Structure within Structure Introduction of Unions
- Difference between Structure and Unions

### **9)File Handling using 'C'**

- Opening and Closing File
- Input / Output operations on File
- Random Access to Files
- Command Line Arguments

### **10)Dynamic Memory Allocation**

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

### **11) Storage Classes and Pre-processor**

- Introduction of Storage Class
- Types of Storage Classes
- Introduction of Pre-processor
- Macro Substitution
- File Inclusion

## Programming in 'C++'

### 12) Introduction to Object Oriented Programming

- Concept of OOP
- Features of OOP
- Introduction of 'C++'
- Structure of 'C++' program
- Executing and Debugging a 'C++' Program

### 13) 'C++' Tokens and Type Casting

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

### 14) Classes & Objects

- Classes & Object Specifier
- Defining data members and member functions
- Array of objects
- Managing console I/O
- 'C++' stream classes
- Formatted and unformatted console I/O
- Usage of manipulators

### 15) Function in 'C++'

- Call by reference, Return by reference
- Function overloading and default arguments
- Inline function
- Static class members



- Friend functions
- Virtual Functions

### **16)Constructors and Destructor**

- Concept of Constructor
- Types of Constructors
- Memory allocation (new and delete)
- Usage of destructor

### **17)Operator Overloading**

- Overloading Unary and Binary operators
- Overloading using friend function

### **18)Inheritance**

- Types of inheritance
- Virtual base classes and abstract base classes
- Constructor and destructor in derived class

### **19)Working with files**

- File operations
- File pointer and their manipulation
- File updation with random access

### **20Exception Handling**

- Various Exception Handling classes
- Implementing try and catch block
- Use of throw keyword

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