

# C ++ PROGRAMMING SYLLABUS



## INTRODUCTION

- Concepts of Object Oriented Programming
- Benefits of OOP
- What is C++
- Structure of C++ Program
- Creating the Source File
- Compiling and Linking

## CLASSES & OBJECTS

- Specifying a Class
- Defining Member Functions
- Making an Outside Function Inline
- Nesting of Member Functions
- Private Member Functions
- Arrays within a Class
- Memory Allocation for Objects
- Static Data Members
- Static Member Functions
- Arrays of Objects
- Objects as Function Arguments

- Friendly Functions
- Returning Objects
- Pointer to Members

## OPERATORS & EXPRESSIONS

- Operators in C++
- Scope Resolution Operator
- Member Dereferencing Operators
- Memory Management Operators
- Manipulators
- Type Cast Operator
- Expressions and Types of Expressions
- Special Assignment Expressions
- Implicit Conversions
- Operator Overloading
- Operator Precedence
- Control Structures

## **OPERATORS OVERLOADING**

- Defining Operator Overloading
- Overloading Unary Operators
- Overloading Binary Operators
- Overloading Binary Operators using Friends
- Manipulation of Strings using Operators
- Rules of Operator Overloading
  
- Type Conversion

## **VIRTUALS FUNCTIONS & POLYMORPHISM**

- Polymorphism Overview
- Virtual Functions
- Pure Virtual Functions

## **EXCEPTION HANDLING**

- Basics of Exception Handling
- Exception Handling Mechanism
- Throwing Mechanism
- Catching Mechanism

## **FUNCTIONS IN C++**

- Function Prototyping
- Call by Reference
- Return by Reference
- Inline Functions
- Default Arguments
- Recursion
- Function Overloading
- Friend and Virtual Functions

## **CONSTRUCTORS & DESTRUCTORS**

- Constructors
- Parameterized Constructors
- Multiple Constructors in a Class
- Constructors with Default Arguments
- Dynamic Initialization of Objects
- Copy Constructor
- Dynamic Constructors
- Destructors

## **INHERITANCE**

- Defining Derived Classes
- Single Inheritance
- Types of Inheritance
- Virtual Base Classes
- Abstract Classes

- Constructors in Derived Classes
- Member Classes

### **MANIPULATING STRINGS**

- Creating String Objects
- Manipulating String Objects
- Relational Operations
- Accessing characters in String
- Comparing and Swapping

### **CONSTANTS, VARIABLES & DATATYPES**

- Keywords and identifiers
- Tokens
- Data Types
- Type Compatibility
- Variable Declaration
- Dynamic Initialization of Variables

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