

C++ Programming Language Course Content

Basic In C++

- Programming Methods
- Object-Oriented Programming
- Introduction to C++
- Variables, Datatypes, Operators
- Reference Operator
- Scope (: Resolution Operators
- Structure of a C++ Program

Control Structures

- Conditional – if, if...else, Nested if...else, Switch...Case
- Loops – While, do...While, For, Nested Loops
- Jump – Goto, Continue & Break

Functions

- Introduction a Function
- Deafening a Function
- Prototypes
- Actual and Formal Arguments
- Parameter Passing Techniques
- Call by Value, Reference, Pointer
- Default Arguments
- Function Overloading
- Inline Functions

Oops Concepts

- Encapsulation
- Abstraction
- Polymorphism
- Static Binding
- Dynamic Binding
- Inheritance
- Message Passing
- Class
- Object

Classes and Objects

- Class Declaration
- Access Member and Member Functions
- Creating Objects
- Differences between Class and Structure
- Objects as arguments
- Returning Objects
- Static Members
- Friend Functions and Classes

Constructors and Destructors

- Introduction
- Defining Constructor
- Comparing Constructor Member Function
- Default Constructor
- Argument Constructor
- Copy Constructor
- Constructor Overloading
- Default Argument in Constructor
- Destructor
- Defining Destructor

Operator Overloading

- Need of Overloading
- Defining Operator Overloaded Function
- Operator Overloading Rules
- Overloading Unary Operators and Unary Operators using Friend
- Overloading Binary Operators and Binary Operators using Friend
- Overloading Other Operators

Inheritance

- Introduction
- Types of Inheritance
- Single Level Inheritance
- Multilevel Inheritance
- Multiple Inheritance
- Hybrid Inheritance
- Hierarchical Inheritance
- Base Class
- Derived Class
- Inheritance Scope
- Protected Members
- Virtual Base Class and Destructors

Advanced Class Concepts

- Container Class & Contained Class
- Local Classes
- Inheritance v/s Containership

Polymorphism and Virtual Functions

- Type Polymorphism
- Dynamic Binding
- Function Overriding
- Difference between Function Overloading and Overriding
- Need of Virtual Functions
- Pure Virtual Functions

Templates

- Need of Template
- Defining Template
- Function Templates
- Class Templates

Exception Handling

- What is Exception?
- Need of Handling Exceptions
- Types Of Exceptions
- Exception Handling Mechanism

Streams

- Hierarchy of I/O Streams
- Istream Class Functions
- Ostream Class Functions
- IOS Class Functions
- Manipulators

Files

- Hierarchy of File Streams
- Opening a File
- File Opening Modes
- Sequential Access Files
- Random Access Files
- Command Line Arguments

Graphics

- Introduction to Graphic
- Initializing Graphic
- Graphic Drivers, Modes and Graphic Functions