Course Contents of C++

Duration: 50 to 55 Sessions (1 Session = 1 Hr.)

Introduction to C++

Understanding Requirement: Why C++
C vs C++
Advantage of OOP
Software and Hardware for C++
Compiling and Linking

An Overview of C++ and Buzzwords

Data Types, Variable and Arrays
Operators and Arithmetic Expressions
Control Statements

Classes and Objects

Defining Members Functions
Array within a class
Memory allocation for Objects
Pointers to Members

Constructors and Destructors

Parameterized/Copy/Dynamic Constructors
Multiple Constructors in a class
Dynamic initialization of objects
Constructing Two-dimensional Arrays
Destructors

Inheritance: Extending Classes

Defining Derived Classes
Constructors in Derived Classes
Single/Multiple/Multilevel/Hierarchical
Hybrid Inheritance
Virtual Base Classes

Operator Overloading

Overloading Unary/Binary Operators
Manipulation of String Using Operators
Rules for Overloading Operators
Type Conversions

Pointers, Virtual Functions & Polymorphism

Pointers to Objects
This Pointer
Pointers to Derived Classes
Virtual Functions

File Management in C++

Introduction to File Management
Opening/Closing a File
Input/output operations on Files
Command Line Arguments

Exception Handling

Basics of Exception Handling
Throwing/Catching Mechanism
Rethrowing an Exception

Template

Introduction to Template
Class Template
Function Template
Overloading of Template Function