

**C++ Syllabus**  
**Course code – R10601**

## C++ Overview

- ✓ C++ Characteristics
- ✓ Object-Oriented Terminology
- ✓ Polymorphism
- ✓ Object-Oriented Paradigm
- ✓ Abstract Data Types
- ✓ I/O Services
- ✓ Standard Template Library
- ✓ Standards Compliance

## Functions and Variables

- ✓ Functions: Declaration and Definition
- ✓ Variables: Definition, Declaration, and Scope
- ✓ Variables: Dynamic Creation and Derived Data
- ✓ Arrays and Strings in C++
- ✓ Qualifiers

## Classes in C++

- ✓ Defining Classes in C++
- ✓ Classes and Encapsulation
- ✓ Member Functions
- ✓ Instantiating and Using Classes
- ✓ Using Constructors
- ✓ Multiple Constructors and Initialization Lists
- ✓ Using Destructors to Destroy Instances
- ✓ Friendship

## Operator Overloading

- ✓ Operator Overloading
- ✓ Working with Overloaded Operator Methods

## Initialization and Assignment

- ✓ Initialization vs. Assignment
- ✓ The Copy Constructor
- ✓ Assigning Values
- ✓ Specialized Constructors and Methods

- ✓ Constant and Static Class Members

## Storage Management

- ✓ Memory Allocation
- ✓ Dynamic Allocation: new and delete

## Inheritance

- ✓ Overview of Inheritance
- ✓ Defining Base and Derived Classes
- ✓ Constructor and Destructor Calls

## Polymorphism

- ✓ Overview of Polymorphism

## Input and Output in C++ Programs

- ✓ Standard Streams
- ✓ Manipulators
- ✓ Unformatted Input and Output
- ✓ File Input and Output

## Exceptions

- ✓ Exceptions
- ✓ Inheritance and Exceptions
- ✓ Exception Hierarchies
- ✓ Inside an Exception Handler

## Templates

- ✓ Template Overview
- ✓ Customizing a Templated Method
- ✓ Standard Template Library Containers