Certification in C++ Programming Language

Syllabus

Duration: 40 Hours

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

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

3. 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**

4. Operator Overloading
- **Operator Overloading**
- **Working with Overloaded Operator Methods**

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

- **Constant and Static Class Members**

6. Storage Management
- **Memory Allocation**
- **Dynamic Allocation: new and delete**

7. Inheritance
- **Overview of Inheritance**
- **Defining Base and Derived Classes**
- **Constructor and Destructor Calls**

8. Polymorphism
- **Overview of Polymorphism**

9. Input and Output in C++ Programs
- **Standard Streams**
- **Manipulators**
- **Unformatted Input and Output**
- **File Input and Output**

10. Exceptions
- **Exceptions**
- **Inheritance and Exceptions**
- **Exception Hierarchies**
- **Inside an Exception Handler**

11. Templates
- **Template Overview**
- **Customizing a Templated Method**
- **Standard Template Library Containers**

12. Project Work

13. Placement Assistance Sessions
- **Mock Interviews**
- **GDs**
- **Preplacement Talks**
- **Industry Exposer Sessions**

14. Internship