C & C++ Programming Syllabus

Module - 1 Basics of C

- History and Features of C
- Importance of C & Procedural Language
- Role of Compiler & Interpreter
- The Structure of a C Program
- Writing C Programs
- Building an Executable Version of a C Program
- Debugging a C Program
- Examining and Running a C Application Program

Module - 2 Control Statement

- The IF.....ELSE Statement
- IF.....ELSE Statement
- Nesting of IF.....ELSE Statements
- The Switching Statements
- The do-while Statement
- The while statement
- FOR Statements

Module - 3 Array in C

- Array: What and Why?
- One Dimensional Arrays
- Two Dimensional Arrays
- Multi Dimensional Arrays
- Dynamic Arrays

Module - 4 Pointers in C

- Understanding Pointers
- Pointer Expressions
- Pointer and Arrays
- Pointers and Character String
- Pointers to Functions
- Pointers and Structures

Module - 5 Structures and Unions

- Defining a Structure
- Advantage of Structure
- Size of Structure
- Arrays of Structures
- Defining Unions

Module - 6 Introduction to C++

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

Module - 7 Operator Overloading

- Operator Overloading
- Working with Overloaded Operator Methods

Module - 8 Initialization and Assignment

- Initialization vs. Assignment
- The Copy Constructor
- Assigning Values
- Specialized Constructors and Methods
- Constant and Static Class Members

Module - 9 Storage Management

- Memory Allocation
- Dynamic Allocation: new and delete

Module - 10 Inheritance & Polymorphism

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

Module - 11 Input and Output in C++ Programs

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

Module - 12 Exception Handling

- Inheritance and Exceptions
- Inside an Exception Handler