Dear Student,

Based upon your enquiry we are pleased to send you the course curriculum for 'C++' Language

Given below is the brief description for the course you are looking for:

❖ Fundamentals of Object-Oriented Programming

- ✓ Structured Vs. Object-Oriented Programming
- ✓ Objects and Classes.
- ✓ Encapsulation and Data Abstraction
- ✓ Inheritance
- ✓ Delegation-Object Composition
- ✓ Polymorphism
- ✓ Message Communication

❖ Moving from C to C++

- ✓ Parameters passing by references
- ✓ Inline Functions
- ✓ Function overloading

❖ Data Types,Operators and Expressions

❖ Control Flow

- ✓ if statement, if-else Statement , Nested if-else Statements
- ✓ for Loop ,while loop,do..while Loop
- ✓ break Statement
- ✓ switch Statement
- ✓ continue Statement

❖ Arrays and Strings

❖ Modular Programming with functions

- ✓ Function Components
- ✓ Passing Data to Functions.

- ✓ Function Return Data Type
- ✓ Library Functions
- ✓ Parameter Passing
- ✓ Return by Reference
- ✓ Inline Functions
- ✓ Function Overloading
- ✓ Function Templates
- ✓ Storage Classes

❖ **Structures and Unions**

❖ **Pointers and runtime binding**

- ✓ Pointers and their Binding
- ✓ Address Operator &
- ✓ Pointer Variables
- ✓ Void Pointers
- ✓ Pointers to Pointers
- ✓ Pointers to Objects
- ✓ Pointers to Constant Objects
- ✓ Constant Pointers
- ✓ Pointers to Structures
- ✓ Wild Pointers.

❖ **Classes and Objects**

❖ **Object Intialization and cleanup**

- ✓ Constructors
- ✓ Parameterized Constructors
- ✓ Destructor
- ✓ Constructor Overloading
- ✓ Order of Constructor and Destructor
- ✓ Nameless Objects
- ✓ Dynamic Intialization through Constructors
- ✓ Copy constructor

❖ Dynamic Objects

- ✓ Pointers to Objects.
- ✓ Live Objects.
- ✓ Array of Objects.
- ✓ Array of Pointers to Objects
- ✓ Pointers to Object Members

❖ Inheritance

- ✓ Forms of Inheritance
- ✓ Inheritance and Member Accessibility.
- ✓ Constructors in Derived Classes.
- ✓ Destructors in Derived Classes.
- ✓ Multilevel Inheritance.
- ✓ Multiple Inheritance.
- ✓ Hierarchical Inheritance.
- ✓ MultiPath Inheritance and Virtual Base Classes

❖ Virtual Functions

- ✓ Need for Virtual Functions.
- ✓ Pointer to Derived Class Objects.
- ✓ Virtual Functions.
- ✓ Array of Pointers to Base Class Objects.
- ✓ Pure Virtual Functions

❖ Generic Programming with templates

- ✓ Function Templates
- ✓ Overloaded Function Templates.
- ✓ Multiple Arguments Function Template.
- ✓ Inheritance of Class Template

❖ File Handling

- ✓ Hierarchy of File Stream Classes.
- ✓ Opening and Closing of Files.
- ✓ File Modes.
- ✓ Sequential/Random Access to a File.
- ✓ Error Handling During File Manipulations.

❖ Exception Handling

- ✓ Error Handling
- ✓ List of Exceptions
- ✓ Catch all Exceptions
- ✓ Exceptions in Constructors and destructors,Operator Overloaded Functions
- ✓ Handler throwing the same Exception again

All chapters to consist of Theoretical Lectures followed by Practical sessions.

** Test will be conducted after every section of this curriculum