<u>Syllabus for 'C++'</u>   **Duration:45Days**

Introduction to Object Oriented Programming
- ➢ Concept of OOP
- ➢ Features of OOP
- ➢ Introduction of 'C++'
- ➢ Structure of 'C++' program

'C++' Tokens and Type Casting
- ➢ Keywords and Identifiers
- ➢ Operators
- ➢ Constants
- ➢ Variables
- ➢ Data Types
- ➢ Precedence of Operators
- ➢ Scope and Lifetime of Variables

Classes & Objects
- ➢ Specifying a class- Defining members functions
- ➢ Private member functions & Nesting of member functions
- ➢ Arrays within a class
- ➢ Memory allocation for objects
- ➢ Static data members & static member functions
- ➢ Objects as function arguments
- ➢ Arrays of objects
- ➢ Returning Objects

Function in 'C++'
- ➢ Call by reference, Return by reference
- ➢ Function overloading and default arguments
- ➢ Inline function
- ➢ Static class members
- ➢ Friend functions

Constructors and Destructor
➢ Concept of Constructor
➢ Types of Constructors
➢ Memory allocation (new and delete)
➢ Usage of destructor

Operator Overloading
➢ Overloading Unary and Binary operators
➢ Overloading using friend function

Inheritance
➢ Inheritance
➢ Types of inheritance
➢ Virtual base classes and abstract base classes
➢ Constructor and destructor in derived class

Pointers, Virtual Functions and Polymorphism
➢ Pointers
➢ Pointers to objects & this pointer
➢ Pointer to derived classes
➢ Virtual functions & pure virtual functions

Working with files
➢ File operations
➢ File pointer and their manipulation
➢ File updation with random access

Templates, Exception Handling
➢ Class templates
➢ Various Exception Handling classes
➢ Implementing try and catch block
➢ Use of throw keyword