**Object Oriented Programming**

**Unit I:** Introduction: OOP concept, Procedural vs OOP programming, OOP terminology and features(data encapsulation, inheritance, polymorphism and late binding), Tokens, Character set, Keywords, Data-types, Data Types declarations, Constants and variables, expressions, Standard Library and header files. Objects & Classes in C++: Declaring & using classes, Constructors, Objects as functions arguments, Copy Constructor, Static class data. Arrays of objects, C++ String class.

**Unit II:** Operator overloading: Overloading unary & binary operators. Data conversion. Pitfalls of operator overloading. Pointers & arrays. Pointers & functions. New& delete operators. Pointers for objects.

**Unit III:** Inheritance in C++: Derived class & base class, Derived class constructors, Function overloading, class hierarchies, Public and private inheritance, Multiple inheritance. containership: classes within classes.

**Unit IV:** Virtual functions concepts, Abstracts classes & pure virtual functions. Virtual base classes, Friend functions, Static functions, Assignment and copy initialization, the this pointer. Dynamic type information.

**Unit V:** Streams & Files in C++: Stream classes, stream errors, disk file I/O with streams, File pointers, Error handling in file I/O. File I/O with members functions, overloading the extractions & insertion operators, Memory as a stream object, command-line arguments, Persistent Objects

**Unit VI:** Function Template, Class templates, Exception syntax, Multiple exceptions, exception with arguments. Introduction to the Standard Template Library. Algorithms, Sequential Containers, Iterates, Specialized iterates, Associative containers. Function objects.

1. C++: The Complete Reference, by Herbert Schildt4 th edition Mc-Graw-Hill

2. Object-Oriented Programming in C++ by Robert Lafore 4th edition Pearson Education

3. The C++ Programming Language by BjarneStroustrupe 3rd edition Pearson Education

**Reference books:** 1. Object Oriented Programming in C++ by Subhash K U Pearson Education

2. Mastering C++ by K R Venugopal Tata Mc-Graw-Hill Education