Unit : 1   **[25%]**

Fundamentals of programming

Concept of Procedural, structured and object oriented programming, Concept of Encapsulation, Abstraction, Data hiding, Inheritance, Operator Overloading and Polymorphism, History of C++ and its object-oriented programming over procedural languages, Classes and objects, Advantages of object-oriented programming over procedural languages, parts of C++ program, Data types, variable and constants, Expression and statements, logical, relational, mathematical operators, turnery operator, Simple I/O statements- reading and writing. Statement for formatted I/O, Usage of header files using INCLUDE statement

Unit : 2   **[25%]**

Array, Structures, Classes and Functions

Looping: While... Do. While, for loop, Continue and break statement, Switch statement, IF statement, IF...ELSE statement, Array: Initializing one-dimensional and two-dimensional array. Multidimensional array, Passing arrays to functions, Array classes, Structures and Enumerated data types : Declaration of Structure, Initialization of structures, Array of structure and pointers to structure , Structures within Structures, Classes: Implementing class, Classes and members. Accessing class members, implementing class methods, constructors and Destructors, Private and public class, Function: Fundamental, passing structure variable to function, pass by value, pass by reference, overloading of function, Inline function, static variable and static function, friend function , friend class

Unit : 3   **[25%]**

Pointer, Operator Overloading and Type Conversions

Pointer: concept of a pointer variable and its declaration, Pointer arithmetic, Pointers in string handling, Pointers to pointer, Arrays of Pointers, Pointers and array names, Dynamic Memory allocations, Pointers to objects, Operator Overloading and Type Conversions: Introduction, Overloading Unary and Binary Operators, Overloading Binary operators using friends, Type Conversions

Unit : 4   **[25%]**

Inheritance, Virtual Functions and File Management

Inheritance: Introduction, defining derived class, single inheritance, multilevel , multiple hierarchical, hybrid inheritance, containership Virtual Functions: static and dynamic binding, virtual base class, constructer in derived class, pointer to derived class, virtual and pure virtual function, Abstract classes, Copy constructor, this pointer, File Management: c++ streams, c++ stream classes, Opening and closing a file, File modes, File pointers and their manipulations, Sequential Input and Output Operations, Random Access

Reference Books:
1. Object-Oriented Programming with C++ By E. Balagurusamy- TMH Publication
2. Object-Oriented Programming in Turbo C++ By Robert Lafore- Galgotia
3. Object Oriented Programming & C++ By Rajaram- Comdex.