

Object Oriented Programming

Detailed Syllabus

S.No.	Contents	Contact Hours
1.	Object oriented paradigm & C++ at a glance: Evolution of programming paradigm, structured versus object-oriented development, elements of object-oriented programming, Objects, classes, methods, popular OOP languages, software reuse. Classes and objects: Introduction, Class revisited, constant objects and constructor, static data members with constructors and destructors, constructor overloading, nested classes, objects as arguments, returning objects , friend functions and friend classes, constant parameters and member functions, static data and member functions.	8
2.	Dynamic objects: Introduction, pointers to objects, array of objects, pointers to object members, this pointer, self-referential classes Operator overloading and Inheritance: overloading of new and delete operators, conversion between objects and basic types, conversion between objects of different classes, overloading with friend functions, abstract classes, inheritance types , virtual base classes, virtual functions, pointer to derived class objects, and base class objects, pure virtual functions, virtual destructors. Generic programming with templates: Introduction, function templates, overloaded function templates, class templates, inheritance of class template, class template containership, class template with overloaded operators.	7
3.	Introduction to byte code, security and portability, Data Types, variables, operators, arrays, type conversion and casting, type promotion, Control statements, standard input-output, Designing Classes, constructors, methods, access specifiers : public, private, protected, inheritance, packages and interfaces, Math, String, Vectors, and Array List classes, polymorphism: function and operator overloading, function overriding, abstract classes.	6
4.	Exception Handling: exception types, nested try-catch, throw, throws and finally statements, Multithread Programming: thread creation, synchronization and priorities.	6

5.	Input-output and file operations: Java.io, stream classes, Byte streams, character streams, serialization. Networking concepts: Client server and socket programming, TCP/IP client and server sockets.	7
6	Applets and Java Swing: Applet design, AWT packages, Applet event handling, parameters to applets, AWT controls, layout manager, Frames, container classes, Introduction to Java Beans, Swing and Servlets.	8
TOTAL		42