

# Object Oriented Programming

☐ Detailed Syllabus

S.No.	Contents	Contact Hours
1.	<b>Object oriented paradigm &amp; C++ at a glance:</b> Evolution of programming paradigm, structured versus object-oriented development, elements of object-oriented programming, Objects, classes, methods, popular OOP languages, software reuse. <b>Classes and objects:</b> 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.	<b>Dynamic objects:</b> Introduction, pointers to objects, array of objects, pointers to object members, this pointer, self-referential classes <b>Operator overloading and Inheritance:</b> 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. <b>Generic programming with templates:</b> 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.	<b>Exception Handling:</b> exception types, nested try-catch, throw, throws and finally statements, Multithread Programming: thread creation, synchronization and priorities.	6

5.	<b>Input-output and file operations:</b> Java.io, stream classes, Byte streams, character streams, serialization. Networking concepts: Client server and socket programming, TCP/IP client and server sockets.	7
6	<b>Applets and Java Swing:</b> 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
<b>TOTAL</b>		<b>42</b>