

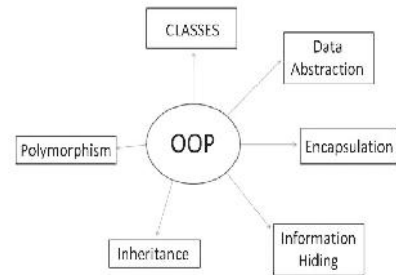
# 16IT201 OBJECT ORIENTED PROGRAMMING

Hours Per Week :

L	T	P	C
3	-	2	4

Total Hours :

L	T	P	WA/RA	SSH/HSH	CS	SA	S	BS
45	-	30	5	40	5	8	5	5



## Course Description and Objective:

This course covers the principles of object oriented programming which includes defining class, creating objects, usage of abstraction, encapsulation, inheritance and polymorphism. Further, it offers concepts of multi-threading, applets, AWT and swings. The objective of this course is to enable the student to develop applications, graphical user interfaces and Internet programs using object oriented concepts.

## Course Outcomes:

The student will be able to:

- distinguish between procedure oriented and object oriented concepts of programming.
- understand OOP concepts and features of Java programming.
- apply Object Oriented concepts in problem solving.
- identify requirements of Internet programming.
- develop Graphical User Interfaces (GUI).

## SKILLS:

- ✓ *Create new packages and interfaces.*
- ✓ *Develop multi-threaded applications.*
- ✓ *Develop remote applets.*
- ✓ *Create web applications.*

**ACTIVITIES:**

- o *Implement the concept of encapsulation.*
- o *Develop a sample program which exhibits inheritance and polymorphism.*
- o *Design and develop Internet programming using applets.*
- o *Implement user interface using AWT and Swings.*

**UNIT - 1****L-10**

**INTRODUCTION, CLASSES AND OBJECTS:** Creation of Java, Importance of Java to Internet, Byte code, Java buzzwords, OOP principles, Encapsulation, Inheritance and polymorphism, Data types, Variables, Declaring variables, Dynamic initialization, Scope and life time of variables, Arrays, Operators, Control statements, Type conversion and casting, Compiling and running of simple Java program, Concepts of classes and objects, Class fundamentals, Declaring objects, Assigning object reference variables, Introducing methods, Constructors, Usage of static with data and methods, Usage of final with data, Access control, This key word, Garbage collection, Overloading methods and constructors, Call by value, Recursion, Nested classes and inner classes, Exploring the string class.

**UNIT - 2****L-8**

**INHERITANCE, PACKAGES AND INTERFACES:** Basic concepts, Member access rules, Usage of super key word, Forms of inheritance, Method overriding, Abstract classes, Dynamic method dispatch, Using final with inheritance, The object class, Defining, Creating and accessing a package, Understanding classpath, Importing packages, Differences between classes and interfaces, Defining an interface, Implementing interface, Applying interfaces, Variables in interface and extending interfaces.

**UNIT - 3****L-9**

**EXCEPTION HANDLING, MULTITHREADING:** Concepts of exception handling, Types of exceptions, Usage of try, Catch, Throw, Throws and finally keywords, Built-in exceptions, Creating own exception, Sub classes, Concepts of multithreading, Differences between process and thread, Thread life cycle, Creating multiple threads using thread class, Runnable interface, Synchronization, Thread priorities, Inter thread communication, Daemon threads, Deadlocks, Thread groups.

**UNIT - 4****L-9**

**WINDOW PROGRAMMING:** Applet class, Applet architecture, Applet skeleton, Applet initialization and termination, Overriding update( ), Simple applet, Display methods, Requesting repainting, A simple banner applet, Using the status window, The HTML applet tag, Passing parameters to applets, Applet context and show document. Event sources, Event classes, Action event, Adjustment event, Component event, Container event, Focus event, Input event, Item event, Key event and mouse event, Delegation event model, Event listeners, Handling mouse and keyboard events, Adapter classes.

**UNIT - 5****L-9**

**AWT AND SWINGS:** Concepts of components, Container, Panel, Window, Frame, Canvas, Font class, Color class and graphics, AWT Controls, Buttons, Labels, Text fields, Text area, Check boxes, Check box groups, Lists, Choice, Scrollbars, Menus, Layout managers, Flow, Border, Grid, Card and grid bag .JApplet, JFrame and JComponent, Icons and labels, Handling threading issues, Text fields, Buttons, The JButton class, Check boxes, Radio buttons, Combo boxes, Tabbed panes, Scroll panes, Trees, and Tables.

**LABORATORY EXPERIMENTS****LIST OF EXPERIMENTS:**

Total Hrs: 30

1. Java program to read an integer and print all prime numbers upto that integer.
2. Java program that checks whether a given string is a palindrome or not.
3. Arrange given list of names in the ascending order.