KCA202 : OBJECT ORIENTED PROGRAMMING		
Course Outcome (CO)	**Bloom's Knowledge Level (KL)**	
At the end of course , the student will be able to		
CO 1	List the significance and key features of object oriented programming and modeling using UML	K_4
CO 2	Construct basic structural, behavioral and architectural models using object oriented software engineering approach.	K_6
CO 3	Integrate object oriented modeling techniques for analysis and design of a system.	K_4, K_5
CO 4	Use the basic features of data abstraction and encapsulation in C++ programs.	K_4
CO 5	Use the advanced features such as Inheritance, polymorphism and virtual function in C++ programs.	K_3, K_4
DETAILED SYLLABUS		**3-1-0**
Unit	**Topic**	**Proposed Lecture**
I	**Introduction:** Object Oriented Programming: objects, classes, Abstraction, Encapsulation, Inheritance, Polymorphism, OOP in Java, Characteristics of Java, The Java Environment, Java Source File Structure, and Compilation. Fundamental Programming Structures in Java: Defining classes in Java, constructors, methods, access specifies, static members, Comments, Data Types, Variables, Operators, Control Flow, Arrays.	**08**
II	**Inheritance, Interfaces, and Packages:** Inheritance: Super classes, sub classes, Protected members, constructors in sub classes, Object class, abstract classes and methods. Interfaces: defining an interface, implementing interface, differences between classes and interfaces and extending interfaces, Object cloning, inner classes. Packages: Defining Package, CLASSPATH Setting for Packages, Making JAR Files for Library Packages, Import and Static Import Naming Convention For Packages, Networking java.net package.	**08**
III	**Exception Handling, I/O**: Exceptions: exception hierarchy, throwing and catching exceptions, built-in exceptions, creating own exceptions, Stack Trace Elements. Input / Output Basics: Byte streams and Character streams, Reading and Writing, Console Reading and Writing Files.	**08**
IV	**Multithreading and Generic Programming:** Differences between multi-threading and multitasking, thread life cycle, creating threads, synchronizing threads, Inter-thread communication, daemon threads, thread groups. Generic Programming: Generic classes, generic methods, Bounded Types: Restrictions and Limitations.	**08**
V	**Event Driven Programming:** Graphics programming: Frame, Components, working with 2D shapes,Using colors, fonts, and images. Basics of event handling: event handlers, adapter classes, actions, mouse events, AWT event hierarchy. Introduction to Swing: layout management, Swing Components: Text Fields, Text Areas, Buttons, Check Boxes, Radio Buttons, Lists, choices, Scrollbars, Windows Menus and Dialog Boxes.	**08**

Suggested Readings:

1. Herbert Schildt, "Java The complete reference‖", McGraw Hill Education, 8th Edition, 2011.
2. Cay S. Horstmann, Gary Cornell, "Core Java Volume –I Fundamentals", Prentice Hall, 9th Edition,2013.
3. Steven Holzner, "Java Black Book", Dreamtech.
4. Balagurusamy E, " Programming in Java", McGraw Hill
5. Naughton, Schildt, "The Complete reference java2", McGraw Hill
6. Khalid Mughal, "A Programmer's Guide to Java SE 8 Oracle Certified Associate (OCA)", Addison-Wesley.