OBJECT ORIENTED PROGAMMING
EE-604 C
Credit: 3
Contact: 3L

Module 1   [10]
Object oriented Design:
Concept of Object oriented programming language, Major and minor elements, Object, Class, relationship among objects, aggregation, links, relationship among classesassociation, aggregation using instantiation, meta-class, grouping constructs.

Module 2   [04]
Object oriented concept:
Difference between OOP and other conventional programming, advantages and disadvantages. Class, object, message passing, inheritance, encapsulation, polymorphism.

Module 3   [26]
Basic concepts of Object oriented programming using Java:
Class & Object properties: Basic concepts of Java programming-advantages of Java, bytecode & JVM, data types, access specifiers, operators, control statements & loops, array, creation of class, object, constructor, finalize and garbage collection, use of method overloading, this keyword, use of objects as parameter & methods returning objects, call by value & call by reference, static variables & methods, garbage collection, nested and inner classes, basic string handling concepts, -String (discuss char(), compare(), equals(), equalsIgnorecase(), indexOf(), length(), substring(), toCharArray(),toLowercCase(), tostring(), methods), concept of mutable and immutable string, command line arguments, basics of I/O operations-keyboard input using BufferedReader & Scanner classes.

Reusability properties: Super class & subclasses including multilevel hierarchy, process of constructor calling in inheritance, use of super and final keywords with super() method, dynamic method dispatch, use of abstract classes, & methods, interfaces. Creation of packages, importing packages, member access for packages.

Exception handling & Multithreading : Exception handling basics, different types of exception classes, use of try & catch with throw, throws & finally, creation of user defined exception classes. Basics of multithreading, main thread, thread life cycle, creation of multiple threads, thread synchronization, inter thread communication, deadlocks for threads, suspending & resuming threads.

Applet Programming (using swing): Basics of applet programming, applet life cycle, difference between application & applet programming, parameter passing in applet in applets, concept of delegation event model and listener, I/O in applets, use of repaint(), getDocumentBase(), getCodeBase() methods, layout manager (basic concept), creation of buttons (JButton class only) & text fields.

Text Books:
1. Object Oriented Modeling and design, James Rambaugh & Michael Blaha, PHI.
2. Object Oriented Programming with C++ and Java, D. Samanta, PHI
3. Programming with Java: A Primer, E. Balagurusamy, TMH.

Reference Books:
1. Object oriented system Development, Ali Bahrami, Mc Graw Hill.
2. The complete reference Java2, Patrick Naughton & Herbert Schildt, TMH