ADIKAVI NANNAYA UNIVERSITY RAJAMAHENDRAVARAM

CBCS / Semester System

(From 2015-2016 Admitted Batch)

B.Sc. Computer Science

III Semester Syllabus

OBJECT ORIENTED PROGRAMMING USING JAVA

UNIT-I:

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Application's of OOP.

OVERVIEW OF JAVA LANGUAGE: Introduction, java features Simple Java program structure, difference between C, C++ and java, java and internet, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments.

CONSTANTS, VARIABLES & DATA TYPES: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values;

UNIT-II:

OPERATORS AND EXPRESSIONS : Arithmetic operators Relational operators, logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic operators, Precedence of Arithmetic operators.

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if Else statement, Nesting of if else statements, the else if ladder, the switch statement, the conditional operator.

DECISION MAKING & LOOPING: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods, visibility controls.

UNIT-III

INHERITANCE: inheritance and types of inheritances, Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes.

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes.

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

UNIT-IV

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors: Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.

UNIT-V

APPLET PROGRAMMING: local and remote applets, difference between Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state Designing web page, adding applet to HTML file, Running the Applet.

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package, Adding class to a package, Hiding classes, static Import.

Prescribed Book:

1. E .Balaguru swamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.

Reference Books:
1. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TMH.
2. Deitel &Deitel. Java TM: How to Program, PHI (2007)
3. Java Programming: From Problem Analysis to Program Design- D.S Mallik
4. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)
5. Java complete reference

PRACTICAL SYLLABUS
OBJECT ORIENTED PROGRAMMING USING JAVA

OBJECT ORIENTED PROGRAMMING USING JAVA LAB

1.   Write a program to perform various String Operations

2.   Write a program on class and object in java

3.   Write a program to illustrate Function Overloading & Function Overriding methods in Java

4.   Write a program to illustrate the implementation of abstract class

5.   Write a program to implement Exception handling

6.   Write a program to create packages in Java

7.   Write a program on interface in java

8.   Write a program to Create Multiple Threads in Java

9.   Write a program to Write Applets to draw the various polygons

10.   Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java

11.   Write a program to assign priorities to threads in java