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