SEMESTER-III

COURSE 7: OBJECT ORIENTED PROGRAMMING

Theory Credits: 3 3 hrs/week

Course Objectives:

The Objective of the course is to assist the student in understanding the concepts of Object Oriented Programming using Java language.

Course Outcomes: At the end of this course the student is able to

CO1: Overview of java programming, history and its features**.(PO5,PO7)**

CO2: Understand fundamentals of programming such as variables, conditional and iterative execution, statements, etc**.(PO5,PO6,PO7)**

CO3: Understand the principles of arrays, inheritance, packages and multi-threading**.(PO5,PO6,PO7)**

CO4: Understand the Fundamental features of Managing Errors, Exceptions and Applet Programming**.(PO5,PO6,PO7)**

CO5: Understand the Files concept in java**.(PO5,PO6,PO7)**

UNIT -I

JAVA Evolution: History – Features, Overview of Java Language: Introduction - Simple Java program - Structure - Java tokens - Statements - Java virtual Machine.
Constants - Variables - Data types - Operators and expressions.

UNIT -II

Decision making and Branching: Simple If Statement, the IF…Else statement, The Else... If ladder, The Switch Statement, The? : Operator, Decision making and looping: The While statement, The do Statement - The for Statement - Jumps in loops - labelled loops - Classes, Objects and Methods. Arrays, Strings

UNIT -III

Vectors – Interfaces- Multiple Inheritance – Packages: Putting classes together –Threaded Programming - Thread life cycle, Multi threads, Deadlocks. Managing Errors and Exceptions, I/O Exceptions.

UNIT -IV

Applet Programming – advantages and disadvantages of Applets, Applet life cycle - Event Handling in Applet, Applet Parameters and Communications; Graphics programming: The Graphics class-Lines and rectangles-Circles and ellipses-Drawing arcs -Line graphs -Drawing Bar charts.

UNIT -V

Files: Introduction – concept of streams – Stream classes – Using stream – I/O classes – File class – creation of files – Reading / Writing characters/ Bytes.

Text Books:			
	Author	**Title**	**Publisher**
1	E. Balaguruswamy,	Programming with JAVA - A Primer, 2015	McGraw Hill Professional

Reference Text Books:			
	Author	**Title**	**Publisher**

1	Sachin Malhotra	Programming in Java	OXFORD University Press
2	John R. Hubbard	Programming with Java, Second Edition	Schaum's outline Series, TATA McGraw-Hill Company.
3	Deitel &Deitel.	Java TM: How to Program 2007	PHI
4	D.S Mallik	Java Programming: From Problem Analysis to Program Design	
5	P. Radha Krishna	Object Oriented Programming Through Java, 2008	Universities Press

Course Delivery method: Face-to-face / Blended

Course has focus on: Skill Development.

Recommended Co – Curricular Activities:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging).
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

B. General

1. Group Discussion
2. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Programming exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerised adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work.

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SEMESTER-III

COURSE 7: OBJECT ORIENTED PROGRAMMING

Practical Credits: 1 2 hrs/week

Course Objective:

The Objective of this course is to apply programming skills in java.

Course Outcomes: At the end of this course the student is able to

CO1: Overview of java programming**. (PO5,PO7)**

CO2: Understand fundamentals of programming such as variables, conditional and iterative execution, statements, etc**. (PO5,PO7)**

CO3: Understand the principles of arrays, inheritance, packages and multi-threading**. (PO5,PO7)**

CO4: Understand the Fundamental features of Exceptions and Applet Programming**. (PO5,PO7)**

CO5: Understand the Files concept in java**. (PO5,PO7)**

LAB LIST

1. Write a java program to print Hello World.
2. Write a java program on Variables.
3. Write a java program to use various Data types.
4. Write a java program to implement main method inside and outside of a class.
5. Write a java program on Operators.
6. Write a java program on Looping.
7. Write a java program to display Fibonacci series.
8. Write a java program to find out the given number is palindrome or not.
9. Write a java program on single and Multi-dimensional array.
10. Write a java program on Strings.
11. Write a java program on interface.
12. Write java programs on various types of Inheritance.
13. Write java programs on Packages.
14. Write a java program on Multi-Threading.
15. Write java programs on various types Exceptions.
16. Write an Applet program to draw a Line, Rectangle, Circle, Ellipse, Arcs a.
17. Write an Applet program to draw Line graphs and Bar charts.
18. Write a java program to create a file.
19. Write a java program to perform read data from a file.
20. Write a java program to perform write data from a file.

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