LESSON PLAN

Program Name	Computer Engineering
Subject Name	OOP using Java
Subject Code	COPE301-III & COPE303-III
Semester	5th
Subject Teacher Name	Er. Suneel Kumar

Evaluation Scheme

Sr. No.	Subject Name	Study scheme (Hrs/Week)	Marks in Evaluation Scheme					
			Internal Assessment			External Assessment		
			Th	Pr	Total	Th	Pr	Total
1.	OOP using Java	2(Th)+1(DCS)+4(Lab)	40	40	80	60	60	120
Reference Books		(i) Programming with Java by E. Balaguruswamy , Tata McGraw Hill Publication						
		(ii) Java 'The Complete Reference' by Herbert Schildt						

Course Outcomes (COs)

CO – 1	Use the syntax and semantics of java programming language and basic concepts of OOP.
CO – 2	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
CO – 3	Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.
CO – 4	Use java standard API library to write complex programs.

Teaching Plan

Unit No.	Name of Topic	Proposed Date	Actual Date	Remarks
	Orientation	13/08/24		
	Procedure-oriented programming vs object-oriented programming (OOP)	16/08/24		
	Advantages of object-oriented programming	20/08/24		
	Concept of objects and classes	22/08/24		
	Essential characteristics of OOP languages – data abstraction, encapsulation	23/08/24		
1	Essential characteristics of OOP languages – inheritance, polymorphism, dynamic binding	27/08/24		
	Brief history of Java, Features of Java	29/08/24		
	Java programming terminology – JVM, JRE, JDK, JNI, WORA	30/08/24		
	Java compiler, Java interpreter, source code, Bytecode, Coding conventions.	03/09/24		

	Structure of a typical Java program, Comments – single-line, multi-line and documentation	05/09/24		
	Role of main() method, Java tokens – identifiers, operators	06/09/24		
	Java tokens – keywords, constants, strings	10/09/24		
	Java tokens – special symbols; Java statements,	12/09/24		
2	Variables – local, instance and static; scope and lifetime of variables	13/09/24		
	Data types, literals, Console based IO using System.in and System.out objects	17/09/24		
	Operators - Arithmetic, Logical, Relational	19/09/24		
	Operators- Bit-wise, Assignment and Conditional Operators	20/09/24		
	Special Operators, Operator precedence and associativity.	24/09/24		
	Selection control structures – if, if...else	26/09/24		
	if...else if ladder, nested if, switch...case	27/09/24		
3	Looping control structures – for and for each	01/10/24		
	Looping control structures – while & do..while	03/10/24		
	Jump statements – break, labelled break, continue, return	04/10/24		
	Basic OOP concepts – class, instance variables, methods, object, creating objects	08/10/24		
	Constructor, Static members	15/10/24		
	final variables and methods, final classes	18/10/24		
	Garbage collection, finalizer method	22/10/24		
4	Packages, Access modifiers, wrapper classes	24/10/24		
	Compile time versus runtime polymorphism	25/10/24		
	Method overloading, Inheritance, method overriding	01/11/24		
	Abstract methods, abstract class, multiple inheritance using interfaces.	05/11/24		
	Array definition, one dimensional array – declaring, initializing	07/11/24		
	Accessing 1-D array elements	08/11/24		
	Multi-dimensional arrays	19/11/24		
5	String, string literals, escape sequences	21/11/24		
	String methods – charAt(), indexOf(), length(), substring(), toLowerCase(), toUpperCase(), replace(), trim()	22/11/24		
	Concept of exceptions, checked and unchecked exceptions, built-in exceptions	26/11/24		

	Implementing exception handling – try, catch and finally blocks	28/11/24		
	using multiple catch statements, throw and throws statements, User-defined exceptions	29/11/24		

Assignments:-

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 and Unit-2	25/09/2024		
A-2	Unit-3 and Unit-4	01/11/2024		
A-3	Unit-5	29/11/2024		

House Test/Class Test:-

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1 and Unit-2	2nd Week of September		
Class Test -2	Unit-3 and Unit-4	3rd Week of October		
House Test-1	Unit-1 to Unit-6	2nd Week of November		

Lab Plan:-

Sr. No.	Name of Practical	Proposed Date G1	Proposed Date G2	Actual Date G1	Actual Date G2	Remarks
1	a) To install and configure JDK on a Windows/ Linux based computer system. b) To display a simple message like "Hello Java !" on the computer monitor.	14/08/24 to 10/09/24	15/08/24 to 10/09/24			
2	To demonstrate the use of various operators.	19/09/24 to 26/09/24	19/09/24 to 26/09/24			
3	To demonstrate the use of different control statements: a) To display the grade of a student based on the marks obtained using 'if...else if' ladder. b) To compute the factorial of a given number using while loop. c) To implement a menu-driven calculator using do...while and switch...case statements. d) To determine the largest element in a 1-dimensional array using 'for each' loop. e) To compute the sum of two matrices using nested for loops.	27/09/24 to 10/10/24	27/09/24 to 10/10/24			
4	a) To define a class and create its objects. b) To demonstrate the use of constructor and finalizer methods of a class. c) To create a hierarchy of packages.	11/10/24 to 24/10/24	11/10/24 to 24/10/24			

5	a) To inherit new classes from existing Java classes. b) To demonstrate the use of different access modifiers.	25/10/24 to 01/11/24	25/10/24 to 01/11/24			
6	a) To demonstrate method overloading. b) To demonstrate method overriding.	08/11/24 to 14/11/24	08/11/24 to 14/11/24			
7	a) To demonstrate the use of abstract methods and abstract classes b) To demonstrate the use of multiple inheritance using interfaces.	16/11/24 to 23/11/24	16/11/24 to 23/11/24			
8	a) To demonstrate the use of arrays. b) To demonstrate the use of various string functions. c) To demonstrate the exception handling mechanism of Java.	26/11/24 to 30/11/24	26/11/24 to 30/11/24			

01/08/24

(Signature of Teacher)

1/8/2024

(Signature of HOD)

Approved

Principal
Govt. Polytechnic for Women Rehan