INSTITUTE OF ENGINEERING & MANAGEMENT

SALT LAKE, KOLKATA

LAB MANUAL

Year : 2021 - 2025

Course Name : Object Oriented Programming Lab

Course Code : PCC CS 593

Semester : V

Branch : CSBS

Object Oriented Programming Lab (PCCCS593)

Name: ……..

University Roll No: ……Class Roll…….

Year: …… Semester: ……

Session: ……

General Information

Name	Object Oriented Programming LAB	**Semester**	5th
Course Code	PCCCS593	**Year with stream**	3rd year CSBS
Course Credit	2	**Session**	
Faculty Instructor/s		**Class hours and total class load**	
Technical assistant/s		**Laboratory**	

Course objectives	***1.*** Understand the concept and underlying principles of Object-Oriented Programming ***2***. Understand how object-oriented concepts are incorporated into the Java programming language ***3.***Develop problem-solving and programming skills using OOP concept ***4.*** Develop the ability to solve real-world problems through software development in high-level programming language like Java ***5.*** Be able to use Java SDK environment to create,debug and run simple java programs

CO1	Students can able to specify simple abstract data types and design implementations, using abstraction functions to document them.
CO2	Students can able to recognize features of object-oriented design such as encapsulation, polymorphism, inheritance, and composition of systems based on object identity.
CO3	Students can able to name and apply some common object-oriented design patterns and give examples of their use.
CO4	Students can able to design applications with an event-driven graphical user interface.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

Safety Norms and precautions	
Do's	1.It is a responsibility to read safety and fire alarm posters and follow the instructions during an emergency 2.Know the location of the fire extinguisher, eye wash, and safety shower in your lab and know how to use them. 3.Obtain permission before operating any high voltage equipment. 4.Clean your lab bench and equipment, and lock the door before you leave the laboratory.
Do not's	1. Never eat, drink, or smoke while working in the laboratory. 2.Avoid using extension cords whenever possible. If you must use one, obtain a heavy-duty one that is electrically grounded, with its own fuse, and install it safely. Extension cords should not go under doors, across aisles, be hung from the ceiling, or plugged into other extension cords. 3.Never do unauthorized experiments.

Course policies
1. Attendance Attendance is compulsory. Please be respectful to your classmates by being on time. Cell phones should be turned off and kept out of sight.
2. Plagiarism Collaboration on performing the experiments and taking measurements is strongly encouraged; however, the lab report you hand in must be solely your own. Sharing written work beforehand is considered as academic dishonesty
3. Disability Support If you have a disabling condition which may interfere with your ability to successfully complete this module, please contact Faculty in charge
4. Make-up Experiment Make-up for a missing experiment will not be offered, normally. The only exceptions to that are illness or emergency (e.g., death in family, a traffic accident, etc.), in which case you may contact your faculty in charge.
5. Beyond Syllabus Experiment As per policy you have to perform at least two innovative experiments from the list of innovative experiments to be provided
6.Micro Project As per policy you have to perform at least one micro project in this lab preferably innovative and lab oriented.
7. Experiment in virtual laboratory As per policy you have to perform at least two virtual experiments

Course assessment process
Continuous assessment
Lab reports [20%] Experiment number, Objective, theory, procedure, results, discussion and conclusion
Lab applications & attendance [10%] Performance on method of working, tit-rating, reading data, tabulating data, plotting graph, attendance etc.
Questions and quizzes at the end of each experiment (10%)
Assessment during end semester examination
Lab examination [40%] Experiments are allotted to the students randomly on lottery basis during examination time which they have to complete within stipulated time.
Viva [20%] There is a 10-minute viva-voce during examination time.

Preferably download:"java_ee_sdk-6u4-jdk7-windows.exe" fromhttp://www.oracle.com/technetwork/java/javaee/downloads/java-ee-sdk-6u3-jdk-7u1-downloads-523391.html

List of Assignments:

Recommended books	1.Rambaugh, James Michael, Blaha – "Object Oriented Modelling and Design" – Prentice Hall, India 2.Ali Bahrami – "Object Oriented System Development" – Mc Graw Hill 3.Patrick Naughton, Herbert Schildt – "The complete reference-Java2" – TMH 4.E. Balagurusamy – " Programming With Java: A Primer" – 3rd Ed. – TMH

Grading Scale	
Grade	***Percent score***
O	*90%-100 %*
E	*80%-89%*
A	*70%-79%*
B	*60%-69%*
C	*50%-59%*
F	*Below 40%*

Date of Expt	***Expt No.***	***Name of Experiment***	***Page Number***	***Signature***	***Grade awarded***
	1	Write a Java Program to implement variables and methods of a class			
	2	Write a Java programs to implement inheritance			
`	***3***	Write a Java programs to implement matrix operations using multidimensional arrays			
	4	Write a Java program to implement compile time & run time polymorphism			
	5	Write a Java program to implement constructor overloading.			
	6	Create a program to implement a stack data structure to store integer data types,defining suitable member functions (push & pop) and a constructor.			
	7	Write a Java program to implement Wrapper classes.			
	8	Write a Java programs to implement abstract class.			
	9	Write a Java programs to implement interface.			
	10	Write a Java programs to define and handle Exceptions in the implementations of Exception class using throw and throws.			
	11	Write a Java programs to implement packages and illustrate access modifiers- public, private, protected and default.			

Date of Expt	*Expt No.*	*Name of Experiment*	*Page Number*	*Signature*	*Grade awarded*
	12	Write a java program to show message passing between inter process using thread concept.			
	13	Write a Java applet to display a textual content and various shapes like circle, oval, rectangle, square on the browser			
	14	Write a Java applet to demonstrate event handing on the browser and a java Program for handling mouse events.			
	15	Write a java program to design a job application/ Student Admission Form and store the values in a file.			
		Beyond Syllabus Assignment			
		Micro Project			

Assignment No:

Title:

Objective:

Problem Statement:

Methodology/ Algorithm /Data Structure/ Design:

Output and Program (to be attached):

Conclusion/ Discussions:

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Teacher's Signature with date