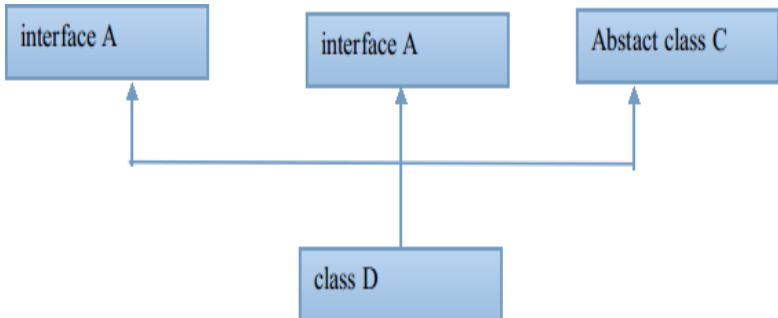**B. P. PODDAR INSTITUTE OF MANAGEMENT & TECHNOLOGY**
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
ACADEMIC YEAR: 2017-2018 ODD SEMESTER
LIST OF EXEPERIMENTS

OBJECT ORIENTED PROGRAMMING LAB (CS 594D)

	Course Outcome	**Cognitive Level**	**PO Mapping**
CO1	Write programs applying concepts of class, object, constructor, method overloading, parameter passing in methods	Apply	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
CO2	Apply concepts of inheritance, polymorphism, method overidding, wrapper class, arrays to develop programs	Apply	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
CO3	Write programs on abstract class, interface, access specifiers, I/O operations and packages	Apply	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2, PSO1, PSO2
CO4	Use exception handling and multithreading concepts to write programs	Apply	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
CO5	design GUI programs using swing and applet programming	Design	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2

UNIVERSITY TOPIC	LIST OF EXPERIMENTS	CO	PO/ PSO

Assignments on class, constructor, overloading, inheritance, overriding	**Assignment No.:1**
	Topic: User defined class and objects
	   Problem Statement:
	1. Write a Java Program to print Hello World.
	2. Create a class Employee having emp_id,name,salary,designation.
	   Use constructor overloading for designing 3 types of employees--
	   i) Freshers (name should be user given and other parameters should be fixed)
	   ii)Executive (Name , salary and designation should be user given)
		CO1	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2

	iii)Temporary member(All the parameter having fixed values) Create an employee array and create and store 3 Employee objects and print the detail.		
Assignments on class, constructor, overloading, inheritance, overriding	**Assignment No.:2** **Topic:I/O operations using API classes** Problem Statement: 1. Write a Java Program to illustrate Scanner, BufferReader and System class for input and output from terminal. 2. Write a Java Program to implement simple calculator using command line arguments.	CO3	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on class, constructor, overloading, inheritance, overriding	**Assignment No.:3** **Topic:Parameter passing, static fields and methods** Problem Statement: 1. (a) In class Employee created in Assignment 1 add static instance field emp_count. Use emp_count for getting emp_id in proper sequence. Also include appropriate accessor method for the instance field emp_count (b) Write a static method in Employee class. (c) Write methods to compare two Employees based upon their salary and return object having higher salary. (d) Write two overloading methods in your Employee class. 2. Write a java program to illustrate - "Java uses pass by value"	CO1	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on class, constructor, overloading, inheritance, overriding	**Assignment No.:4** **Topic:String class, StringBuffer class** Problem Statement: 1. Write a java program to illustrate following String API methods. charAt() , compareTo(), equals(), equalsIgnoreCase(), indexOf(), length() , substring(), toCharArray() , toLowerCase(), toString(), toUpperCase() , trim() , valueOf() 2. Write a java program to illustrate following StringBuffer API methods. append(), capacity(), charAt(), delete(), deleteCharAt(), ensureCapacity(), getChars(), indexOf(), insert(), length(), setCharAt(), setLength(), substring(), toString() methods), 3. Write a java program for explaining the concept of mutable and immutable string.	CO1	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on creating and accessing packages	**Assignment No.:5** **Topic: Packages, Access Specifiers** Problem Statement: 1. Java program to implement the concept of importing classes from user defined package and creating packages. 2. Write a java program to explain the use of access specifiers - Public,Protected, Default, Private	CO3	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2

Assignments on class, constructor, overloading, inheritance, overriding	**Assignment No.:6** **Topic: Inheritance, Polymorphism** Problem Statement: 1. Create a class Shape having atmost two dimensions. Define two subclasses circle and rectangle of Shape. i) Override a method area. ii)Show compile time and run time polymorphism (Dynamic method dispatch). iii)Use a final method for display. iv) use super keyword.	CO2	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on developing interfaces- multiple inheritance, extending interfaces	**Assignment No.:7** **Topic:Interface, Abstract class** Problem Statement: 1. Define an abstract class figure. Define the area and volume method in the child classes. Use dynamic method dispatch. 2.Implement the following design with suitable example classes. 	CO3	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on wrapper class, arrays	**Assignment No.:8** **Topic: Array of objects, Wrapper class** Problem Statement: 1. Create a Student class having roll no. , name, dept., marks. Use array of objects to store details of 5 students. List the name of the student a) having highest marks b) lowest marks c) Marks more than avarage. 2. Use wrapper class for explaining autoboxing and unboxing.	CO2	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Additional Experiments	**Assignment No.:9** **Topic: Exception handling** Problem Statement: 1. Write a program to implement the concept of Exception Handling using predefined exception. 2. Write a program to implement the concept of Exception Handling by creating user defined exceptions. NOTE: Use throws, throw, try, catch and finally keywords in your program.	CO4	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on applet programming	**Assignment No.:10** **Topic: Applet using awt and swing** Problem Statement:	CO5	PO1, PO2, PO3, PO4,

	1. Java program for printing your name , roll no,year of admission, Dept. and section by using Applet. Configure the Applets by passing parameters. 2. Use getDocumentBase() and getCodeBase() methods in the Applet. 3. Write a program for key event handling.		PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on multithreaded programming	**Assignment No.:11** **Topic: Multithreading extending Thread class** Problem Statement: Write a program to create multiple threads by using thread class.	CO4	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Assignments on multithreaded programming	**Assignment No.:12** **Topic: Multithreading implementing Runnable Interface** Problem Statement: 1) Write a program to create multiple threads by implementing Runnable interface. 2) Use join(), isAlive(), getPriority(), SetPriority() methods.	CO4	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Additional Experiments	**Assignment No.:13** **Topic: Use of an API class** **Problem Statement:** Write a program that uses the GregorianCalendar class to display a calendar for the current month. The current date should be marked with *		PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2