Semester	III	Class	**D.S.E.**
Course Code	CSL304	Academic Year	2023-24
Course Name	Skill based Lab Course: Object Oriented Programming with Java		
Name of Student	**Shardul Sameer Brid**		

List of Experiments

Sr. No.	Name of Experiment	DOP	DOC	Marks	Sign
	Basic Experiments				
1	Implement a program using Basic programming constructs like branching and looping				
2	Implement a program to accept the input from user using Scanner and Buffered Reader.				
3	Implement a program that demonstrates the concepts of class and objects				
4	Implement a program on method and constructor overloading.				
5	Implement a program on Packages.				
6	Implement a program on 2D array & strings functions.				
7	Implement a program on single inheritance.				
8	Implement a program on Multiple Inheritance with Interface.				
	Project / Assignment				
9	Course Project: Project Title				
10	Assignment 1: OOP and Basic Constructs				

11	Assignment 2: Classes and Objects				
12	Assignment 3: Strings ,Arrays and Vectors				
13	Assignment 4: Single and Multiple Inheritance				
14	Assignment 5: Exception Handling and Thread Management				
15	Assignment 6: Applet and AWT Controls				
Formative Assessment					
16	PR - Quiz 1: Branching, looping and Conditional Statements				
17	PR - Quiz 2: User input Scanner, BufferedReader class				
18	PR - Quiz 3: Function Overloading				
19	PR - Quiz 4: Inheritance and Method Overriding				
20	PR - Quiz 5: Exception Handling, Multithreading				
21	PR - Quiz 6: AWT Controls				

Course In-charge

Mrs. Sneha M. Yadav

Vidyavardhini's
College of Engineering & Technology

Vasai Road (W)

Department of Computer Science & Engineering (Data Science)

Laboratory Manual

Semester	III	Class		S.E.
Course Code	CSL304			
Course Name	Skill based Lab Course: Object Oriented Programming with Java			

Vidyavardhini's College of Engineering & Technology

Vision

To be a premier institution of technical education; always aiming at becoming a valuable resource for industry and society.

Mission

- To provide technologically inspiring environment for learning.
- To promote creativity, innovation and professional activities.
- To inculcate ethical and moral values.
- To cater personal, professional and societal needs through quality education.

Department Vision:

To foster proficient artificial intelligence and data science professionals, making remarkable contributions to industry and society.

Department Mission:

- To encourage innovation and creativity with rational thinking for solving the challenges in emerging areas.
- To inculcate standard industrial practices and security norms while dealing with Data.
- To develop sustainable Artificial Intelligence systems for the benefit of various sectors.

Program Specific Outcomes (PSOs):

PSO1: Analyze the current trends in the field of Artificial Intelligence & Data Science and convey their findings by presenting / publishing at a national / international forum.

PSO2: Design and develop Artificial Intelligence & Data Science based solutions and applications for the problems in the different domains catering to industry and society.

Program Outcomes (POs):

Engineering Graduates will be able to:

- **PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

- **PO2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

- **PO3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

- **PO4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

- **PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

- **PO6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

- **PO7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

- **PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

- **PO9. Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

- **PO10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- **PO11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

- **PO12. Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

1	To learn the basic concept of object-oriented programming
2	To study JAVA Programming language
3	To study various concepts of JAVA programming like multithreading, exception handling, packages etc.
4	To explain components of GUI based application.

Course Objective

CO	At the end of course students will be able to:	Action verbs	Bloom's Level
CSL304.1	Apply the Object Oriented Programming and basic programming constructs for solving problems using JAVA.	Apply	Apply (level 3)
CSL304.2	Apply the concept of packages, classes , objects and accept the input using Scanner and Buffered Reader Class.	Apply	Apply (level 3)
CSL304.3	Apply the concept of strings, arrays, and vectors to perform various operations on sequential data.	Apply	Apply (level 3)
CSL304.4	Apply the concept of inheritance as method overriding and interfaces for multiple inheritance.	Apply	Apply (level 3)
CSL304.5	Apply the concept of exception handling using try, catch, finally, throw and throws and multithreading for thread management.	Apply	Apply (level 3)
CSL304.6	Develop GUI based application using applets and AWT Controls.	Develop	Create (level 6)

Course Outcomes

Mapping of Experiments with Course Outcomes

List of Experiments	Course Outcomes					
	CSL304.1	CSL304.2	CSL304.3	CSL304.4	CSL304.5	CSL304.6
Implement a program using Basic programming constructs like branching and looping	3	-	-	-	-	-
Implement a program to accept the input from user using Scanner and Buffered Reader.	3	-	-	-	-	-
Implement a program that demonstrates the concepts of class and objects	-	3	-	-	-	-
Implement a program on method and constructor overloading.	-	3	-	-	-	-
Implement a program on Packages.	-	-	3	-	-	-
Implement a program on 2D array & strings functions.	-	-	3	-	-	-
Implement a program on single inheritance.	-	-	-	3	-	-
Implement a program on Multiple	-	-	-	3	-	-

Inheritance with Interface.					
Mini Project based on the content of the syllabus (Group of 2-3 students)	-	-	-	-	3