# 19CS21P1 - OBJECT ORIENTED PROGRAMMING THROUGH JAVA LABORATORY

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| **Course Category:** | Program Core | **Credits:** | 1.5 |
| **Course Type:** | Practical | **Lecture - Tutorial - Practical:** | 0-0-3 |
| **Prerequisite:** | Basic knowledge of programming fundamentals. | **Sessional Evaluation:**  **Univ. Exam Evaluation:**  **Total Marks:** | 40  60  100 |
| **Objectives** | * To strengthen the ability to identify and apply the suitable object oriented concept for the given real world problems. * To develop skills to design the applications in java. | | |

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| **Course Outcomes** | After the completion of this lab, the students will be able to learn to develop various applications using core concepts of Java. |
| **Course Content** | 1. Write a Java program    1. To demonstrate blocks of code in java    2. To demonstrate the scope and life time of a variable    3. For matrix multiplication (Read input from the user) 2. Write a Java program to create class called Box.    1. Create objects of type Box and assign values to the side. Find and print the volume of each box objects created.    2. Add a method (taking sides as parameters) to the above mentioned class to calculate and return the volume.    3. Assign value to the sides using a parameterized constructor.    4. Use the Box class to show how to the instance variables are hidden. 3. Write a Java program to create Box class.    1. Create overloaded constructors and return the volume of the Box from a method.    2. Pass Box object as parameter and calculate its volume. 4. Write a Java program for methods with Variable-Length arguments. 5. Write a Java program    1. To create a multi-level hierarchy using the Box class created in question 2.    2. To create hierarchical Box class and access the super class attributes. 6. Write a Java program    1. For dynamic dispatching of methods    2. To create Abstract classes and use the created abstract class    3. To prevent overriding of methods. 7. Write a Java program that demonstrates    1. Multiple catch clauses.    2. Nested try statements 8. Write a Java program that describes the exception handling mechanism. 9. Write a Java thread that manages Inter thread communication. 10. Write a Java program to exemplify Generic with wildcards. 11. Write a Java program (using swing components) to obtain login name, password, programming languages known, course being done and the department studying. Display the entered details in a suitable GUI component. |
| **Text Books and References:** | Reference Books:   1. Java: The Complete Reference, 10th Edition, Herbert Schildt TMH, Indian Edition. 2. An introduction to java programming and object oriented application development, R A Johson-Thomson. . |
| **E-Resources** | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> 3. [www.javatpoint.com](http://www.javatpoint.com) |