Devi Ahilya University, Indore, India Institute of Engineering & Technology				III Year B.E. (Electronics & Telecommunication Engg.)			
Subject Code & Name	**Instructions Hours per Week**			**Credits**			
ETR5L3	L	T	P	L	T	P	Total
SOFTWARE WORKSHOP	-	-	2	-	-	2	2
Only Practical examination will be held							

Learning Objective: To familiarize students about Java based application programs

Prerequisites: Basics of Java programming

COURSE CONTENTS

UNIT-I

Introduction to Object Oriented Programming, Java based application programs related to topics such as conditional statements, iteration statements with a focus on problems related to electronics and telecommunication.

UNIT-II

Introduction to string handling, Arrays, Java based application programs related to these topics with a focus on problems related to electronics and telecommunication.

UNIT-III

Introduction to Inheritance and Polymorphism, Java based application programs related to these topics with a focus on problems related to electronics and telecommunication.

UNIT-IV

Exception handling and Multi-threading, Java based application programs related to these topics with a focus on problems related to electronics and telecommunication.

UNIT-V

Java I/O, Applets and Event Handling, creating GUIs in AWT windows, Java based application programs related to these topics with a focus on problems related to electronics and telecommunication.

List of Practical Assignments:

1. Write a program that converts inches to centimeters.

2. Write a program in which the program gives output numbers 1 to 10 along with their square roots.

3. Write a program to find the average of five double numbers.

4. Write a program to determine the area of a sector of circle of radius r and angle subtended by the sector at the centre, a. The values of these variables are entered by the user.

5. Write a program that finds the greatest of 4 integer numbers using ternary operator. The number values are entered by the user of the program.

6. *Write a program in which a sample of 8 random numbers is generated and an average value is determined by the user.*

7. *Make a program which uses a for loop to calculate and display squares and cubes of numbers from1 to 8.*

8. *Write a program that finds the greatest of 4 integer numbers using ternary operator. The number values are entered by the user of the program.*

9. *Write a program in which a sample of 8 random numbers is generated and an average value is determined.*

10. Write a program in which a class is declared to deal with the chracteristics of regular polygons and declare methods for determining area and perimeter. The lenght of the side and number of sides are declared public.

11. Write a program in which a method is declared to determine volume of a box with lenght, width and height as variables. The arguments should be passed on by refernce.

12. Create a class Circle. Wrte a program to calculate:

    (i) circumCircle() - to compute the circumference of a circle.

    (ii) arcLenght – to compute the lenght of the arc for a given angle.

13. Within the main method of the class Circle, create an object of the class Circle. Compute Circle's circumference when the radius is 10 and arc lenght when the angle is 45.

14. Write a proMake an applet program to display strings in different colors.gram that declares an array of type double and finds out the square roots of the array elements.

15. *Write a program to demonstrate the multiplication of two matrices.*

16. *Write a program in which method overriding is implemented. The super class declares two instance variables i.e. radius and height, and define a method to determine the volume. The sub class determines the volume of cone and cylinder.*

17. *Make program to determine the trigonometric functions sin(), cos() and tan() by using methods of Math class for angles 30, 60, and 90 degrees.*

18. *Declare an interface with a method to calculate volume with one double parameter. Implement the same for finding volume of sphere and volume of a cube.*

19. *Make an applet program to display strings in different colors.*

Learning Outcomes:

Upon completing the course, Student would be able to:
- Write Java based application programs
- Learn to apply the concepts relating to various topics

BOOKS RECOMMENDED:

[1] Herbert Schildt, Java The complete reference, McGraw Hill Education private limited, 2013.

[2] Anita Seth, B.L.Juneja, Java One Step Ahead, Oxford University press, 2017.

[3] Timothy, Budd, Object Oriented Programming, 3/E Pearson Education, 2002.

[4] Cay S.Horstmann, Core Java, vol-1,8/E, Pearson Education, 2008.