4/4 B.Tech. SEVENTH SEMESTER

CE7L2 ENVIRONEMENTAL ENGINEERING LAB Credits: 2

Lecture: -- Internal assessment: 25 marks
Lab : 3 periods/week Semester end examination: 50 marks

Objectives:

- To learn the laboratory practices to estimate the total, suspended and dissolved, fixed and volatile solids, turbidity, alkalinity, acidity, hardness, chlorides, Ph value, optimum dose of coagulant, D.O, fluorides, BOD, COD, chlorine demand and residual chlorine and nitrogen present in the water and waste water samples.

Learning outcomes:

After performing the experiments listed in the syllabus, the students will be able to

- To evaluate water quality based on physical, chemical and biological analysis of water quality.
- Understanding the BOD test determines the strength of sewage, industrial wastes of the polluted water.
- Environmental Engineering Lab conducts experiments to analyze and interpret data, in several areas which can include air quality and resources, water and soil quality and environmental and human health impacts.
- Environmental Engineering Lab water analysis determines water is poor, good or excellent quality.

LIST OF EXPERIMENTS :

1. Determination of pH and Turbidity
2. Determination of Conductivity and Total dissolved solids.
3. Determination of Alkalinity/Acidity.
4. Determination of Chlorides.
5. Determination and Estimation of total solids, organic solids and inorganic solids.
6. Determination of iron.
7. Determination of Dissolved Oxygen.
8. Determination of Nitrogen.
9. Determination of total Phosphorous.
10. Determination of B.O.D
11. Determination of C.O.D
12. Determination of Optimum coagulant dose.
13. Determination of Chlorine demand.
14. Presumptive coli form test.

LIST OF EQUIPMENT:

1. pH meter,
2. Turbidity meter,
3. Conductivity meter,
4. Hot air oven,
5. Muffle furnace,
6. Dissolved Oxygen meter,
7. U – V visible spectrophotometer,

8. Reflux Apparatus,
9. Jar Test Apparatus,
10. BOD incubator.

Learning resources

Text books:

1. Chemistry for Environmental Engineering by (4th edition) by Sawyer and Mc. Carty, McGraw - Hill International Book Company, 1994.
2. Standard Methods for Analysis of water and Waste Water – APHA