III B.Tech II Semester

15ACE38-ENVIRONMENTAL ENGINEERING LAB

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Course Objective:

The laboratory provides knowledge of estimating various parameters like pH, Chlorides, Sulphates, Nitrates in water. For effective water treatment, determination of optimum dosage and chloride demand are also included. The estimation status of Industrial effluents will also be taught in the laboratory by estimating BOD and COD of effluent.

LIST OF EXPERIMENTS:

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

NOTE: At least 8 of the above experiments are to be conducted.

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.
11) COD Extraction apparatus

Course outcome:

- *Be able to understand different properties of water.*
- *Be able to trace the dissolved solids present in the water*
- *Can trace the levels of Oxidation in the given water sample*
- *Be able to understand different minerals present in the water and the methods to remove them*

Text Books:

3. Chemistry for Environmental Engineering by Sawyer and Mc. Carty
4. Standard Methods for Analysis of water and Waste Water – APHA
5. Environmental Engineering Lab Manual by Dr.G.Kotaiah and Dr.N.Kumara Swamy, Charotar Publishers, Anand.

References: Relevant IS Codes.