

ENVIRONMENTAL ENGINEERING LABORATORY

Practicals : 3 Periods/Week

Sessional marks : 40

Semester End Exam. 3 Hrs.

Semester End Exam. marks : 60

Credits : 2

Course Objectives:

- To determine the physical characteristics of drinking water/sewage – turbidity.
- To determine chemical characteristics of drinking water/sewage – pH, various types of solids, acidity, alkalinity, D.O etc.
- To determine the chlorine dosage and residual chlorine in treated water sample.
- To determine the Bio-chemical and Chemical Oxygen Demands of sewage.
- To estimate Most Probable Number of given water sample.
- To train the student for using instruments like pH meter, turbidimeter etc.
- To estimate optimum dosage of coagulant (Alum).

Course Outcomes:

- At the end of the course the student will be able to:
- Conduct tests for physical, chemical, biological quality of water/sewage.
- Use the instruments with appropriate precautions to obtain maximum precision in the readings.
- Conduct jar test to determine the exact quantity of alum needed at treatment plant based on the turbidity of the given sample.
- Ascertain whether the given water sample contain pathogens or not.
- Conclude whether the given water is fit for drinking or not by comparing the quality parameters with BIS standards (IS 10500 – 1991)
- Decide whether the given sewage can be directly disposed off into a stream or to be treated.

Note: A minimum of twelve (12No) shall be done and recorded

1. Determination of total, suspended and dissolved solids in water / sewage sample.
2. Determination of fixed and volatile solids in water / sewage sample.
3. Determination of Settleable Solids.
4. Determination of turbidity of water / sewage sample.
5. Determination of pH value of water / sewage sample.
6. Determination of optimum dose of coagulant.
7. Determination of residual chlorine.
8. Determination of temporary and permanent hardness of water sample.
9. Determination of chloride concentration of water / sewage sample.
10. Determination of acidity of water sample.
11. Determination of alkalinity of water sample.
12. Determination of fluorides in water sample.
13. Determination of Dissolved Oxygen of water / sewage sample.
14. Determination of Biochemical Oxygen Demand (BOD) of waste water.
15. Determination of Chemical Oxygen Demand (COD) of waste water.