

WATER AND WASTEWATER ANALYSIS LAB

Paper Code: ETEN-259

Paper: Water and Wastewater Analysis Lab

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List of Experiments:

Based on theory courses ETEN 203 (8-10 experiments)

1. Determination of COD of the wastewater sample.
2. Determination of BOD of the wastewater sample.
3. Determination of Total kjeldahl Nitrogen (TKN), Ammoniacal nitrogen and Organic Nitrogen in wastewater sample.
4. Determination of Phosphate and Orthophosphate using UV/Visible Spectrophotometer.
5. Optimization of coagulant dose with Jar Test for the treatment of water/ wastewater/ effluent.
6. Optimization of pH for precipitation of hydroxides of Chromium and Zinc.
7. Determination of Chromium and Zinc in industrial wastewaters Determination of effect of pH and time on adsorption of textile dye on Activated carbon.
8. Development of Adsorption Isotherms for batch operations.
9. Presumptive test for detection of microorganisms.
10. Confirmative test for confirmation of E. Coli.
11. Plate count test for E. Coli/ Pathogenic Bacteria.
12. Determination of Nitrate in the given wastewater sample using UV/Visible Spectrophotometer/ Ion Selective electrode
13. Determination of fluoride concentration in the given waste water sample using UV/Visible Spectrophotometer/ Ion Selective electrode.
14. Estimation of chloride, residual chlorine and chlorine demand of a given water sample.

Reference Books

1. American Public Health Association, "Standard Methods for Examination of Water and Wastewater", American Water Works Association, Water Environment Federation.
2. Sawyer C.N., McCarty P.L. and Parkin G.F., "Chemistry for Environmental Engineering and Science", Tata McGraw Hill Publishing Company Ltd., New Delhi.
3. De A.K., "Environmental Chemistry ", New Age International Ltd., New Delhi, 1995.
4. CPCB, "Guide on Water and Wastewater analysis".

NOTE:- At least 8 Experiments out of the list must be done in the semester.