- 3. InduShekhar Thakur. Text book of Environmental Biotechnology.
- 4. Pradipta Kumar Mohapatra. Text book of Environmental Biotechnology.
- 5. Singh, B.D. Text book of Environmental Biotechnology.

PRACTICAL COURSES

ESP406ENVIRONMENTAL CHEMISTRY LAB.

Course Outcomes:

CO1Determine metal concentration in industrial effluents.

CO2Learn the principles for the estimation of various chemicals present in water and soil.CO3Estimate various soil quality tests.

CO4Understand saponification value of oil.

- 1. Determination of pH and conductivity of different water and soil samples.
- 2. Determination of calcium and magnesium in different samples.
- 3. Determination of total dissolved solids in water samples.
- 4. Determination of carbonates and bicarbonates in water samples.
- 5. Determination of chloride in water sample.
- 6. Estimation of Iodine value of given oil samples.
- 7. Determination of copper content in industrial effluents.
- 8. Determination of ferrous ion in the samples.
- 9. Estimation of the amount of Phenol/Aniline in the water samples.
- 10. Determination of Saponification value of oil.

ESP407ENVIRONMENTAL GEOLOGYLAB.

Course Outcomes:

- CO1 Exercise and compute water budget.
- CO2 Observe hand specimens to identify and classify different types of rocks.
- CO3 Estimate ground water quality.
- CO4 Understand environmental data interpretation.
 - 1. Identification of Minerals and Rocks.
 - 2. Physical properties and chemical composition of various rock forming minerals.
 - 3. Hand specimen study of Igneous, sedimentary and metamorphic rocks.
 - 4. Classification of soils, sediment, their texture, mineralogy.
 - 5. Interpretation of Toposheets.
 - 6. Study of littoral drift in the field and laboratory using dye and tracer techniques.
 - 7. Drainage Basin Analysis and drainage frequency maps.
 - 8. Exercises related to water budget.
 - 9. Exercises related to Potential Evapotranspiration.
 - 10. Compute monthly water budget from the given data.
 - 11. Ground water quality Impact and Testing.
 - 12. Interpretation of waves, climate, tides and currents for the given data.