

## **SKILL COURSE ON ENVIRONMENTAL POLLUTION AND MANAGEMENT**

(FOR NON ZOOLOGY PG STUDENTS OF II & IV SEM)

- Pollution ecology- definition, sources of pollution, classification of pollutants, primary and secondary pollutants. Water pollution- sources, types of pollutants effect and control measures. Sewage and wastewater treatment. Water quality – criteria and standards.
- Air pollution – sources, natural contaminants- aerosol, dust, smoke, mist, fogs and fumes. Particulate matter- Suspended particulate matter ( SPM), respirable particulate matter ( RSPM), PM 10, PM2.5, PM1. Measurement of pollution and control measures. Air pollution standards. Light pollution – sources and control measures. Radiation pollution – types, nuclear fallout and their effect on ecosystem.
- Impact of environment pollution – global warming, green house effect, ozone depletion, acid rain and their effect on human beings.
- Environment Impact assessment (EIA) – Introduction and methodology. Application of GPS and GIS in environment management.
- Environment protection act (1986), Air (prevention and control of pollution act 1981), Water (prevention and control of pollution act) Act 1974

### **PRACTICALS**

1. Measurement of Ph, temperature, alkalinity, hardness, nitrate, phosphates, conductivity , and TDS in water sample.
2. Determination of sodium and potassium in water sample.
3. Determination of Suspended particulate matter ( SPM), respirable particulate matter ( RSPM), PM 10 in ambient air.
4. Determination of PM 2.5 and PM 1 in ambient air.
5. Determination of noise level in different area with dB meter.
6. Measurement of light intensity with lux meter.
7. Use of GPS and GIS for survey of polluted environmental site.
8. Visit to Water filter plant/ sewage treatment plant and project report submission.

### **REFERENCE BOOKS**

1. Fundamental of Ecology by Odum
2. Environment Protection and the Law by Dr. R K Khitoliya
3. Environmental Studies by Singh, Thakur & Chauhan
4. Ecology, Environment & Pollution - P K Gupta
5. Ecology and Environment by P D Sharma
6. Environmental science – A Practical manual – I.g Swarjya –PB- B.S Publication
7. Practical skills in Environmental science – PB – by Allen Jones
8. Water analysis – by N.K Dutta ( HB) Eastern book house
9. Handbook of water and waste water analysis – by Kanwaljeet Kaur ( HB) –Atlantic publisher
10. Manual of soil, plant & water analysis –Tahar Ali and Sumiti Naryan – Daya Publishing house
11. Manual of soil, plant and water analysis – by Dhyansingh – Westville publishing house –
12. Principles and practices of air pollution, control & analysis –J.R Mundakavi –IK P. house
13. Environmental pollution analysis - S.M Khopkar – PB- New Age publication
14. Handbook of methods in Environmental studies – water and waste water analysis –S.K Maiti – vol I and II – Oxford Book Company
15. Standard Methods For the Examination of Water and Wastewater - Lenore S. Clesceri, Andrew D. Eaton, Eugene W. Rice , Rodger B. Baird – 22 nd Ed by American Public Health Association APHA- – Published by Alpha publishing
16. Environmental Impact assessment: P.R.Trivedi