BACHELORS WITH ENVIRONMENTAL SCIENCE AS MAJOR (CT-2)
5th SEMESTER

EVS522J2 ENVIRONMENTAL SCIENCE_ ENVIRONMENTAL POLLUTION CONTROL AND MANAGEMENT

CREDITS: THEORY-4, PRACTICAL -2

COURSE LEARNING OUTCOME: *The students in this course will be able to achieve the competence in the area of prevention and control measures of various types of pollution like air, water, soil, noise and electromagnetic. Students are expected to achieve the technical competence in monitoring the various types of pollutants.*

THEORY (4 CREDITS: 60 HOURS)

UNIT I: AIR POLLUTION CONTROL AND MANAGEMENT

Control of particulate air and gaseous air pollution; Bio-filters for control of air pollution; Indoor air pollution control; Noise control and abatement measures

UNIT II: WATER POLLUTION CONTROL AND MANAGEMENT

Sanitation and sewage treatment (Municipal. Industrial and Agriculture); Control of eutrophication; Restoration of lakes and wetlands; Control of stream and river pollution; Groundwater pollution management; Control of marine pollution

UNIT III: SOIL POLLUTION CONTROL AND MANAGEMENT

Control of soil pollution; Soil conservation and control of soil erosion; Waste lands and their reclamation; Reclamation of soils (acidic. alkaline, sodic); Sustainable agricultural practices; integrated pest management.

UNIT IV: WASTE AND RADIATION MANAGEMENT

Plastic and E-waste management; Radioactive waste management: Reduction in health impacts of cell phones and towers; Solutions for reducing light pollution; Measures to control thermal pollution;

PRACTICALS: (2 CREDITS) 60 HOURS

1. Determination of gaseous pollutants in ambient air
2. Case studies on air quality index of various cities
3. Estimation of BOD in different waters
4. Estimation of COD in different waters
5. Measurement of soil erosion
6. Survey of a local area for identification of common soil pollutants such as pesticides, organic pollutants and fertilizers
7. Preparation of report about solid waste management practices adopted in the campus of the institute.
8. Visit to any landfill site /SWM facility

SUGGESTED READINGS:

1. Environmental protection, Sue, Elworthy & Jane, Holder. 1997. Cambridge University Press
2. Environmental and Pollution Laws in India, T. S. Doabia (4th Ed.). 2022. Lexis Nexis Publishers.
3. Environmental Law and Policy in India,: Shyam, Diwan & Armin, Rosencranz (3rd Ed.). 2023. Oxford University Press
4. Environmental Law in India, Gurdip Singh (2nd Ed.). 2016. MacMillan Publisher.
5. Handbook of Air Pollution Prevention and Control, Nicholas, P. Cheremisinoff. 2002. Butterworth-Heinemann LTD BH.
6. Handbook of Air Pollution Prevention and Control, Shrinivash Rao. 2016. Scitus Academics LLC.
7. Water Quality Control Handbook, E. R. Alley. 2007. The McGraw-Hill Companies INC.
8. Water Pollution and Management, S. Malik, Sunil Kumar and Umesh Bharti. 2011. Biotech Books.
9. Soil Pollution: Origin, Monitoring and Remediation, Ibrahim Mirsal. 2008. Springer-Verlag Berlin and Heidelberg GmbH and Co.K.
10. Soil Pollution: Processes and Dynamics, Bruno Yarson, Raoul Calvet, Rene Prost. 1996. Springer-Verlag Berlin and Heidelberg GmbH and Co. K.
11. Radioactive Waste Management, James Saling (2nd Ed.). 2001. Routledge.
12. Decommissioning and Radioactive Waste Management, A. Rahman. 2008. Whittles Publishing.