

School of Advance Studies in Industrial Pollution Control Engineering

Syllabus for online written examination of PhD admission :

- **Development, Acts, Rules.** Statutory standards, conceptual aspects of EIA, ES, EMP, Hazardous substances & Risk analysis.
- **Water and Atmospheric pollution** – types, causes sources, primary and secondary pollutants, effects, dispersion of Air pollutants, control measures, standards solid waste-classification, collection and disposal management,
- **Water Resources and water quality** for domestic, Industrial uses.
- Water and Waste treatment methods.
- Physical and chemical characteristics of waste water, measurement of organic content-BOD. COD, TOC etc. Biological Protista, characteristics of waste water, Waste water treatment.
- Unit Operations: Screening Flocculation, Sedimentation Flotation, Filtration, Disposal of sludge, Chemical treatment, Separation Technology (Liquid extraction, absorption, adsorption, membrane separation).

- Biological treatment: aerobic and anaerobic cycles, growth kinetics, activated biological sludge process, trickling filter, stabilization ponds and other processes and design considerations. Advanced waste water treatment, processes for industrial effluents. Design of aerobic and anaerobic reactors.
- Treatment and disposal of sludge and solid wastes.
- Biogas. Air environment and its management. Nature of air pollutants and their effects. Particulars and their removal methods- removal devices of air pollutants and design considerations. Treatment of flue gases. Process design considerations for reducing emission.