PEI206: ENVIRONMENT MONITORING INSTRUMENTATION

L	T	P	Cr
3	0	0	3.5

Course Objectives: To understand the concepts of pollution monitoring, to enable select, design and configure pollution monitoring instruments

Review: Elemental analysis of C, H, N, S and O, Spectrometry, Optical Techniques, Chromatography, Potentiometry, X-ray Analytical Methods

Air Pollution: Impact of man of the environment: An overview, Air pollution sources and effects, Metrological aspect of air pollutant dispersion, Air pollution sampling and measurement, Air pollution control methods and equipment, Air sampling techniques, soil pollution and its effects, Gas analyzer, Gas chromatography, Control of specific gaseous pollutants, Measurement of automobile pollution, Smoke level meter, CO/HC analyzer.

Water pollution: Sources And classification of water pollution, Waste water sampling and analysis, marine pollution, Waste water sampling techniques and analyzers, Gravimetric, Volumetric, Calometric, Potentiometer, Flame photometry, Atomic absorption spectroscopy, Ion chromatography, Instruments used in waste water treatment and control, Solid waste management techniques.

Pollution Management: Management of radioactive pollutants, Noise level measurement techniques, Instrumentation for environmental pollution, Monitoring and audit, Instrumentation setup for pollution abatement. Noise pollution and its effects, social and political involvement in the pollution management system

Course learning outcome (CLO): After the completion of the course the students will be able to:

1. Study air pollution sources and its effects
2. Analyse air pollution sources and its effects
3. Investigate sources and classification of water pollution
4. Perform air pollution sampling and measurement, air pollution control methods and equipment, air sampling techniques
5. Monitor and audit management, noise level measurement techniques, instrumentation for environmental pollution.

Recommended Books:

1. *Bhatia, H.S., A Text Book in Environmental Pollution and control, Galgotia Publication (1998).*
2. *Dhameja, S.K., Environmental Engineering and Management, S.K Kataria (2000).*
3. *Rao, M.N. and Rao, H.V., Air Pollution, Tata McGraw Hill (2004).*
4. *Rao. C.S., Environmental Pollution Control, New Age International (P) Limited, Publishers (2006) 2nd ed.*

Evaluation Scheme:

Evaluation Elements	Weightage (%)
MST	30
EST	50
Sessionals (May include Assignments/ Projects/ Tutorials/ Quizes/ Lab Evaluations)	20