



**MANGALORE UNIVERSITY**  
**DEPARTMENT OF BIOSCIENCES**  
**M.Sc. ENVIRONMENTAL SCIENCE**

**ESS503 AIR, NOISE AND RADIATION POLLUTION**

**39 hrs**

**Course Outcomes:**

CO1 Demonstrate the various forms of air pollution and its impact on environment.

CO2 Discuss on noise pollution, effect and prevention.

CO3 Demonstrate radioactivity and its protection methodology.

CO4 Learn industrial noise control.

**UNIT I (13 hours)**

Air pollution: Natural and anthropogenic sources. Transportation and dispersion of pollutants, gas laws governing the behaviour of pollutants in atmosphere, properties of air pollutants. Air quality - air quality monitoring - objectives, conventional monitoring, non-conventional approaches, sampling methods, gaseous sampling, stack monitoring, monitoring of particulates and smoke - air quality standards.

**UNIT II (13 hours)**

Noise: Sources of noise, reasons for Noise pollution, physical characteristics of sound waves -anatomy of sound. Theory of noise measurement – sound pressure, loudness, sound intensity. Effects of noise pollution - Physico-chemical, social and psychological effects of noise. Prevention and control of noise pollution, Industrial noise control. Government rules to check noise pollution.

**UNIT III (13 hours)**

Radioactivity: Introduction, disintegration types, units of radioactivity, interaction of radiation with matter, ionization types of exposure, detection and measurement of radiation, Dosimeters. Biological effects of radiation. Stochastic and deterministic effects, Radiation protection, system of dose limitation, protection methodology.

**References:**

1. Manahan, S.E. Environmental Chemistry, Lewis Publications, Florida, U.S.A, (7<sup>th</sup> Ed.) (2000)
2. Sharma, B.K.& Kaur. Environmental Chemistry, Goel Publishing House, Meerut (1995)
3. Santra, S.C. Environmental Science, New Central Book Agency Pvt. Ltd., Kolkata.
4. Sawyer, C.N, Mc Marty, P.L. and Perkin, G.F. Chemistry for Environmental Engineering, Mc Graw Hill, (II ed) (1994)
5. Tyagi, O.D. and Mehra, M. Environmental Chemistry, Anmol Publications (1990)