

MANGALORE UNIVERSITY
DEPARTMENT OF BIOSCIENCES
M.Sc. ENVIRONMENTAL SCIENCE
ESH452 ENVIRONMENTAL POLLUTION

Course Outcomes:

- CO1 Demonstrate various types of pollution.
- CO2 Learn different sources of pollution.
- CO3 Understand the details of bioindicators.

UNIT I (13 hours)

Definition of environmental pollution: Types of pollution – Air, water, land, sound.

Radioactive pollution; Transfer and Transport mechanism of pollutants.

UNIT II (13 hours)

Concepts of sources of air pollution: Gases & particulates and their components. Solid wastes – Sources of waste generation and disposal, characteristics of wastes. Effects on soil, biotic community, groundwater and air.

UNIT III (13 hours)

Sources of water pollution – Domestic, municipal, industrial and agriculture. Various water bodies as sites of waste disposal and their local, national and global impact.

UNIT IV (13 hours)

Bioindicators: Overview of bioindicators – theory, practices and problems; bioindicators of air, water and soil pollution. Biomonitoring of heavy metals, biomonitoring of air pollution around urban and industrial sites; organisms used as indicator of pollution.

References

1. Diwakar Rao, P.L, 1990. Pollution control Hand book, Utility Publications Ltd., Secunderabad, India.
2. Eaton, A.D., Clesceri L.S. & Greenberg, A.E., 1995. Standard Methods for the Examination of Water and Wastewater, APHA, Washington.
3. Moriarty, F., 1975. Pollutants and animals; A factual perspective. George Allan & Unwin Ltd., London.
4. Schmitz, R.J, 1996. Introduction to water pollution biology. Asian Books Pvt. Ltd., New Delhi.
5. Trivedi, P.R. and Sudarshan, K., 1995. Global Environmental issues, Commonwealth Publications, New Delhi.
6. Vernberg *et al.*, 1981. Biological monitoring of marine pollutants, Academic Press, New York.
7. George, A., 2000. The Ecology of sea shores, CRC Press.
8. Agrawal, K.C., 2002. Environmental Pollution: Causes, Effects and Controls.
9. Binoda C. Sabata, 1995. River Pollution in India.

10. Khetan S.K., 2000. Microbial Pest Control.
11. James, G.A., 1999. Ethical Perspective on Environmental issues in India.

