**EHS 2103 ENVIRONMENTAL POLLUTION (3 CU)**

**Course Description:** The course describes sources and types of pollution and how they are measured in the environment. It also deals with methods to prevent and control pollution including application of relevant laws, rules and regulation.

**Course Objectives**

By the end of this course, the student should be able to:

1. Define terminologies in environmental pollution.
2. Describe health problems related to environmental pollution
3. Describe the sources and types of environmental pollution.
4. Explain different techniques of measuring environmental pollution.
5. Explain the legislation concerning environmental pollution.
6. Demonstrate ability to use appropriate equipment and techniques in the identification and control of environmental pollution.

**Detailed Course Outline**

* Terminologies used in air, water, noise and soil pollution
* Atmosphere: **c**omposition, atmospheric regions
* Radiation balance. Human impact on the earth (green house effects)
* Air Pollution:definition, sources of air pollution, major air pollutants, the effects of air pollution, measurements of pollutants, air pollution of major health importance
* Noise Pollution:Sources of noise, noise as a nuisance, noise and hearing loss, effects of noise on learning ability and work performance, safety aspects of noise, sleep disruption, noise control efforts
* Soil Pollution: Sources of soil pollution, major soil pollution, the effects of soil pollution, soil pollution of major health importance, measurement of pollution, soil pollution control
* Toxicology:Risk assessment, polychlorinated biphenyl’s (PCBs), dioxins, Asbestos, Lead, Mercury, Cadmium, Chromium. Poisonous plants. Hazardous materials and wastes
* Radiation safety:Ionizing and non ionizing radiation, ultra violet radiation, microwaves, Extremely Low Frequency Electromagnetic Radiation (ELFER)
* Equipment used in air and soil pollution monitoring and management
* Remediation of contaminated sites
* Legislation related to pollution
* Laboratory work
* Field visits/work

# Mode of delivery:

* Lectures, tutorials, laboratory work and field visits.

**Requirement:**  A laboratory

**Mode of Assessment**

- Continuous assessment **(40%)**.

- End of semester exam: MCQ’s, short answer and long assay questions **(60%)**.

**Suggested Reading List**

1. Lecture handouts and additional materials on reserve at the MUSPH Resource Centre.

2. Nadakavukavien. A; Man and Environment- A Health Perspective 3rd Edition

3. Ponofsky. H; “Earth’s endangered ozone” Environmental magazine , vol.20 No.3, 1978

4. Jackson H.H & Moris G. P. et al. Environmental Health; Reference book; Butterworths, London. 1989.

5. Sandy Caircross & Feachem Richard G; Environmental health- an introductory text; John Wiley & sons, N.Y., 1982

6. Salvato Joseph, Environmental Engineering & Sanitation 4th edition; John Wiley & sons 1992.

7. Sandy Cairncross and Feachem Richard G; *Environmental Health Engineering in the Tropics* John Wiley & sons, N.Y., 2002

8. Salvato Joseph, Nemerow N. L. and Argady, F. J*Environmental Engineering & Sanitation* 5th Ed; John Wiley & sons, 2003.

# 9. Timbrell, J.A. (1995). *Introduction Toxicology.* Taylor and Francis

10. Ballantyne, B., Marrs, T. and Turner, P. (1995). *General and Applied Toxicology*. Macmillan

11. Niesink, R.J.M., deVries, J. and Hollonger, M.A. (1996). *Toxicology: Principles and Application.* CRS Press

12. Shaw, I.C. and Chandwick, J. (1998). *Principles of Environmental Toxicology.* Taylor and Francis