

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
BOT-411	Water Pollution, its Management and Control	3	VIII
Year	Discipline		
4	BOTANY		

Syllabus Outline: To identify Water Quality and its Parameters; Organic and Inorganic Pollutants, Pesticides, Oil, Thermal and Heavy Metal Pollutions in Water; Water Pollution Management and Control.

Course Outline:

Introduction; Nature and Scope, Water Requirements in Society, Water Pollution Parameters., Properties of Polluted Water, Sources of Water Pollution.

Organic Pollution and Eutrophication, Origin of Organic Pollutants, Pathogens. Effects of Organic Pollutants, Eutrophication, Sources of Nutrients, Effects of Eutrophication and its Control.

Pesticide, Thermal and Oil Pollution of Water, Sources of Pesticides in Water, Bioaccumulation and Degradation of Pesticides, Adverse Effects of Pesticides, Thermal Pollution of Water and its Impacts, Sources and Nature of Oil-Pollution, its Effects and Control.

Heavy Metals in Aquatic Environment, Nature and Concern about Heavy Metals, Sources of Contamination of Mercury, Lead, Cadmium, Arsenic, Chromium, Zinc, Copper and Manganese and their Toxicity.

Waste Water Management; Introduction, Chemical Treatment (Primary, Secondary and Tertiary Treatments), Biological Treatment (Aerobic and Anaerobic Treatments).

Water Pollution Control: Background Information, Legislation, Various approaches to Water Pollution Control.

Module Aims: To highlight the importance of Water Pollution to student and to acquaint them with its different types. To teach them the ways to Control Water Pollution and teach its Arrangements.

Learning Strategies:

1. Lectures
2. Group Discussion
3. Laboratory Work
4. Seminar/ Workshop

Learning Outcome: The student is expected to know the parameters which determine Water Pollution, the various ways in which it can become polluted, the Management and Control of Polluted Water Habitants.

Assessment Strategies:

1. Lecture Based Examination (Objective and Subjective)
2. Assignments
3. Class Discussion
4. Quiz
5. Tests

Books Recommended:

1. **Lenihan, J. and Fletcher, W.W. (2004).** *The Marine Environment: Environment and Man* (Vol. VI). (Ed.). Blackie and Sons, Glasgow and London.
2. **Southwick, C.H. (2003).** *Global Ecology*. Sinauer Associates Inc. Publishers. Sunderland, Massachusetts.
3. **Ciaccio, L.L. (2001).** *Water and Water Pollution Handbook*. Marcel-Dekker, Inc. New York.
4. **Mason, C.F. (2001).** *Biology of Freshwater Pollution*. Longman Printing Company, London and New York.
5. **Harrison, R.M. (2000).** *Pollution: Causes, Effects and Control*. The Royal Society of Chemistry. Cambridge.
