CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of WATER MANAGEMENT

Semester 1st to 3rd (Multi-Disciplinary Course)

Course Title: Water Sources & Pollution

Course Code: UGWMT22D101 **Max. Marks: 75**
Credits: 3 **External: 55; Min Marks: 22**
Contact Hrs: 45 **Internal (Continuous Assessment): 20 Marks, Min Marks: 08**

Learning Objectives:
Students will be able -

1. To learn about the sources of water with special reference to J&K.
2. To gain knowledge about various types of water pollutants, consequences of water pollution and control at individual level.
3. To gain knowledge about various water conservation techniques.

Learning Outcomes:
After the completion of the syllabus, the student will gain knowledge of -

1. Resources of water.
2. Water pollution and its effects
3. Control of water pollution

Unit I **15 Hours**

Sources of water

1.1. Water as a resource

1.2. Inland water resources and importance

1.3. Ground water resources and importance

1.4. Marine water resources and importance

1.5. Water potential of J&K (Brief account

Unit II **15 Hours**

Water pollution I

2.1. Concept of water pollution

2.2. Classification of water pollutants

2.3. Sources of water pollution

2.4. Consequences of water pollution

2.5. Eutrophication

Unit III **15 Hours**

Water pollution II

3.1. Bio-magnification

3.2. Water over-use at individual/domestic level

3.3. Water harvesting: Concept and Importance

3.4. Water Ethics: Concept and Principle

3.5. Control of water pollution (Brief account)

List of Recommended Books:

1. Agarwal, A. State of India's Environment: A Citizens Report, Centre for Science and Environment, New Delhi
2. APHA, Standard Methods for Examination of Water and Wastewater. American Public Health Association, New York
3. Arceivala, S.J. Wastewater Treatment and Disposal, Marcel Dekker Inc, New York (1981)
4. Bockris, J.O.M. Environmental Chemistry, Plenum Press New York, U.S.A. (1978)
5. Goel, P.K. Water Pollution: Causes, Effects and Control. New Age International, Publishers, New Delhi (2006)
6. Khoshoo, T.N. Environmental Concepts and Strategies, Ashish Publishing House, New Delhi (1984).
7. Mahida, U.N. Water Pollution and Disposal of Wastewater on LandTata McGraw Publishing Co. Ltd., New Delhi, 1981.
8. Metcalf and Eddy, Inc. Wastewater Engineering: Treatment Disposal, Reuse, Tata McGraw Hill Edition, New Delhi.
9. Mishra, P.C. and Trivedy, R.K. (ed.) Ecology and Pollution of Indian Lakes and Reservoirs, Ashish Publishing House 1993. pp. 450
10. Nemerow, N.L. Industria Water Pollution: Origins, Characteristics and Treatment, Addision-Wesley Publishing Co., Inc. Philipines, 1971.
11. Trivedy, R.K. and Goel, P.K. Chemical and Biological Medhods for Water Pollution Studies. Environmental Publications, 1986. Pp. 250.
12. Trivedy, R.K. and Goel, P.K. (ed.) Current Pollution Research in India Environmental Publications, 1985. Pp. 350.
13. Trivedy, R.K. (ed.) River Pollution in India, Ashish Publishing House, 1990. Pp. 300
14. Trivedy, R.K. (ed.) Advances in Environmental Pollution and Control (Vo. I & II). Enviro-Media, 1995. Pp. 300.
15. W.H.O. Water Pollution Control in Developing Counties, WHO, Geneva