

Government Degree College, Baramulla

SEMESTER 1st

SKILL ENHANCEMENT COURSE

Subject: Water Management

Title: Water Quality Assessment

Code: BWM22S102

Credit: (2+2) Theory: 02; Practical: 02

Contact Hours: 32 (T) + 64 (P)

***Course Objective:** Students opting water management as skill course will be become qualified and trained professionals to cater water related issues and problems.*

***Learning outcome:** The student is expected to demonstrate practically physical, chemical and biological characteristics of water using various techniques.*

THEORY: 02 CREDITS

Unit1: Water resources and pollution monitoring

(16 hrs)

Types of water resources and their distribution, Water pollution- sources, effects and control, surface and ground water pollution, Sewage treatment plant: design and working, Water sampling- collection, preservation and storage, cleaning of glassware.

Unit II: Water quality analysis

(16 hrs)

Physico-chemical parameters (pH, Temperature, Conductivity, T A, T H, salinity and DO), Principle and Working of pH meter and conductivity meter, Water quality standards for drinking - BIS and WHO.

PRACTICAL: 02 CREDITS

(64 hr)

1. Sampling methods: Manual, automatic and sorbent.
2. Sampling types: Grab, composite and integrated.
3. Collection, storage and preservation of samples.
4. Sampling of different freshwaters for physical and chemical analysis.
5. A visit to sewage treatment plant.
6. Determination of physico-chemical parameters; pH, EC, TDS, salinity, Temperature, Total Hardness, Calcium, Magnesium, Total alkalinity and DO.

Reference Books

1. Standard Methods for Examination of water & waste water (2020) APHA- AWWA- WPCE
2. Manual of water & waste water analysis, NEERI, Nagpur.
3. Limnological Analyses, (2000) Robert G. Wetzel and Gene E. Likens, 3rd ed. (Springer-Verlag,)
4. Water supply & sanitary engineering by Birdie.
5. Basic concepts of analytical chemistry By S. M. Khopkar.
6. Vogel's textbook of quantitative chemical analysis. (Longman) ELBS,Edn.
7. Handbook of organic qualitative analysis, By Clarke.
8. Textbook of Limnology, Gerald A. Cole, 4th ed.
9. Instrumental methods of analysis By Dr. B. K. Sharma.
10. Introduction to Limnology, (2005), Stanley Dodson, ISBN 0-07-287935-1
11. A Treatise on Limnology, (1957–1975) by G. E. Hutchinson.
12. Ecology of Fresh Waters (1998), B. Moss, Blackwell.