CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department of WATER MANAGEMENT

Semester 1st Skill Enhancement Course (SEC)

Course Title: Mineral Water Treatment and Processing-I

Course Code: UGWMT22S101 **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory External: 15; Min Marks: 06**
Contact Hrs:105 (Theory: 15, Practical: 90) **Theory Internal (Continuous Assessment): 10 Marks, Min Marks: 04**
Practical Experimental Basis= 45 Marks, Min. Marks: 18
Practical Internal (Continuous Assessment): 30 Marks, Min. Marks: 12

Learning Objectives

Students will be able -

1. To learn about the water sampling techniques.
2. To gain knowledge about various water quality parameters.
3. To gain knowledge about various water quality standards.

Learning Outcomes

After the completion of the syllabus, the students will gain knowledge of -

1. Water consumption
2. Drinking water quality standards
3. Importance of Mineral Water

THEORY:

UNIT I: Water and its Standards

1.1 Drinking Water, importance and issues
1.2 Water sampling techniques
1.3 Water quality parameters (pH, Turbidity, Conductivity TS, TDS, TSS,Hardness DO & Conductivity)
1.4 Drinking water quality standards (BIS & WHO)
1.5 Mineral Water emergence and importance

UNIT II: PRACTICAL (Laboratory Work) (90 Hrs)

1. Evaluation of per capita domestic water consumption pattern
2. Calculation of personal water footprint
3. Determination of Physical Parameters Odour , colour ,temperature &Turbidity , Transparency and Depth of any Water Body
4. Determination of pH, Conductivity, DO and CO_2 of given water sample
5. Determination of Total Hardness as Calcium Carbonates / Bi carbonates & Chlorine content of water Samples
6. Determination of E. coli by a standard method.
7. Questionnaire based survey on water demands of different sectors(domestic, Commercial and industrial)
8. Visit to drinking water supply scheme.

Suggested Readings:

- Bansil, P.C. 2004. Water Management in India. Concept Publishing Company,India. Brebbia, C.A. 2013. Water Resources Management VII. WIT Press. CEA.2011.
- Fundamentals of Groundwater. John Willey and Sons. Souvorov, A.V. 1999
- Vickers, A. 2001. Handbook of Water Use and Conservation. WaterPlow Press.
- C S Rao, Third Edition, Environmental Pollution Control Engineering