

GUJARAT UNIVERSITY
B. Sc. SEMESTER III
CHEMISTRY
ACCORDING TO NEP - 2020

Course Structure with respect to credit, hours and marks

Course Type	Course	Credit	Work Hours/ week	Exam hours	Marks		Total Mark
					Internal	External	
Skill Enhancement course	SEC- CHE - 236 Water analysis	2	1+2 = 3	2	25	25	50

Skill Enhancement Course (CHEMISTRY)
SEC- CHE - 236
Water Analysis

Learning objectives:

1. To know the importance of quality of water.
2. To study the general properties of water and understand water resources and water conservation.
3. To develop awareness about water quality criteria and standards, and their relation to public health and environment.
4. Know about the methods for the determination of water quality parameters.

Learning outcomes:

By the end of the course, the students will be able to:

1. Learn how to run accurate water quality tests and to determine how the parameters relate to each other.
2. Acquire skills in the analysis of water quality parameters and thus monitoring water quality.
3. Develop research ideas about in the field of analytical chemistry.

**B. Sc. SEMESTER III
CHEMISTRY
SKILL ENHANCEMENT COURSE [SEC- CHE -236]
Water Analysis**

UNIT – I:

Analysis of water

[25 Marks]

[15 Hours]

Introduction, Concept of pure water, Water Contamination, Sources of water contamination, Categories of water contaminants, Water sampling methods, Water purification method, Boiling, Filtration, Distillation, Chlorination, Reverse osmosis.

UNIT-II:

PRACTICAL: Laboratory tests for water quality parameters

[25 Marks]

[30 Hours]

- (1) Determination of total, permanent and temporary hardness of water sample (EDTA method).
- (2) Determination of Acidity of water sample.
- (3) Determination of Alkalinity of water sample.
- (4) Determination of total dissolved solids of water sample.
- (5) Determination of carbonates and bicarbonate of water sample.
- (6) Determination of pH of water sample.
- (7) Determination of conductance of water sample.

Reference Books:

1. Gauging the Ganga: Guidelines for sampling and monitoring water quality, 2017 by Chandra Bhusan and D D Basu, Centre for Science and Environment, New Delhi.
2. Standards method for the examination of water and waste water, American Public health association.

3. Guidelines on standard analytical procedures for water analysis, Technical Assistance, Hydrology project, Government of India and Netherlands.