



Sir P. T. Science College, Modasa

SYLLABUS FOR ADD-ON CERTIFICATE COURSE

ON

WATER QUALITY

(EFFECTIVE FROM THE ACADEMIC SESSION 2023-24)

P. G. CENTER IN BOTANY

DEPARTMENT OF BOTANY

- ▶ Course Code: BOTWQ 2
- ▶ Year of Establishment: 2023
- ▶ Course Duration: 30 hours
- ▶ Entry Requirement : 12th pass (Science) or B.
Sc. Student
- ▶ Course Fees: Rs. 250/-
- ▶ Course offered by: Department of Botany
- ▶ Seat Availability: 25

♣ Course Description:

Water is used in every cell of our body. Water travels throughout our body carrying nutrients, oxygen, and wastes to and from our cells and organs. Water keeps our body cool as part of our body's temperature regulating system. Water cushions your joints, and protects your tissues and organs from shock and damage. Clean fresh water is one of the most vital natural resources. Since quality of water is susceptible to change with time and other factors, continuous monitoring of water is essential. Water quality assessment provides the base line information on water safety. Qualitative and quantitative measurements are needed to guarantee the purity of water from various sources of supply. This course on water quality assessment is an attempt to equip students with theoretical background and practical skill to participate in water ensuring practices.

♣ Aims:

The course intends to prepare a students in acquiring skills on the art of water monitoring and quantitative analysis of critical water quality parameters. It also brings in those aspects of biology and chemistry which are important for water quality management and pollution control.

♣ Learning Objectives:

At the end of the course the students will be able to:

- Know the importance of water
- Explain the general properties of water and understand water resources and water conservation.
- Develop awareness about water quality criteria and standards, and their relation to public health and environment.
- Understand important parameters for measuring water quality.
- Know about the methods for determination of water quality parameters.
- Learn how to run accurate water quality tests and determine how the parameters relate to each other
- Know the water quality related diseases.

■ Course Content:

I. Water Quality Fundamentals (8 hours)

Physical and Chemical properties of water, Chemistry of water. Water resources, Importance of water, water pollution. Important water quality parameters and methods for their determination – colour, taste, temperature, turbidity, pH, acidity, alkalinity, chemical constituents, hardness, BOD, DO etc. Water sampling, Standards for drinking water quality, Water born disease, household water treatment and safe storage.

II. Practical – Laboratory tests for water quality monitoring (15 hours)

Determination colour, test, temperature, pH, conductivity, turbidity. Test for chloride, carbonate, bicarbonate, calcium, total hardness, acidity, alkalinity, solids.

III. Project (7 hours)

Quality assessment of water samples collected from different localities.

- Process of Continuous Assessment and Grading:

It will be based on the following:

- ▶ Attendance of the students
- ▶ Continuous assesmnet in both theoretical class and practical
- ▶ Multiple Choice Questions
- ▶ Viva – voce
- ▶ Project report

- ♠ Examination Pattern:

- Multipal Choice Question – 10 Marks
- Viva-voce – 10 marks
- Project Report and Presentation – 20 marks

Total marks: 40

► Gradation Pattern:

Percentage of marks obtained	Grade
90 -100	Excellent –A+
70-89	Very Good - A
50-69	Good -B
40 -49	Fair – C
Below 40	Not Eligible for Certificate - D