

# **CERTIFICATE PROGRAMME IN WATER QUALITY ASSESMENT (CCWQA)**

**DEPARTMENT OF CHEMISTRY**

**MARYMATHA ARTS AND SCIENCE COLLEGE, MANANTHAVADY**

Course Code: CPWQAMMC21

Year: 2021

Course Duration: 30 hours

Entry Requirement: Interested First year B. Sc Chemistry students

Course Coordinator: Dr. Linet Rose J

## **Course Description and Aim of Course**

Clean fresh water is one of the most vital natural resources. Since quality of water is susceptible to changes 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 skills to participate in water quality ensuring practices. The course intends to prepare a student in acquiring skills on the art of water monitoring and quantitative analysis of critical water quality parameters. It also brings in those aspects of chemistry which are important for water quality management and pollution control.

## **Learning Outcomes**

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

- 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 the determination of water quality parameters
- Learn how to run accurate water quality tests and to determine how the parameters relate to each other.

## Course Content

### **I. Water Quality Fundamentals (8 hours)**

Chemistry of water, Physical and chemical properties, Water resources, water pollution, Important water Quality parameters and methods for their determination - turbidity, color, taste, pH, acidity, alkalinity, chemical constituents, hardness, dissolved oxygen etc., water sampling, standard for drinking water as per BIS specifications, household water treatment and safe storage.

### **II. Practical - Laboratory tests for water quality monitoring (15 hours)**

Determination of pH and conductivity, Test for acidity and alkalinity, Test for total hardness, Test for chloride, calcium, iron etc., calculation of magnesium content and total solids.

### **III. Project (7 hours )**

Quality assessment of water samples collected from different localities.