Pravara Medical Trust's,

# Arts, Commerce and Science College, Shevgaon

Tal-Shevgaon, Dist-Ahmednagar 414502.

## Department of Chemstry

## Certificate Course on Soil and Water Testing

## Syllabus

### Objectives of the Course:

1) To develop basic understanding regarding soil testing in the students.
2) To introduce them with macro and micro nutrients for soil.
3) To enhance their skills about water analysis.

### Course Outcomes:

After completion of the certificate course in soil and water testing, student will be able to:

1) Understand the Role of micronutrients in plant growth and development.
2) Soil testing – various soil testing methods can be learnt.
3) Impart knowledge on soil health, its assessment and maintenance for sustaining soil productivity.
4) Clear understanding of soil health and soil quality indices.
5) Describe the main sources of water pollution, the main types of pollutant and how each type may controlled.
6) Understand the role of water testing: Water quality parameters like pH, ECD, Hardness, alkalinity, DO.

### Certificate Course on Soil and Water Testing

**Detail Syllabus: Theory**

**Chapter 1: Soil Testing**

Introduction, Types of Soil, Soil pollutants, role of soil testing, Collection of soil sample for testing, determination of soil parameters viz., pH, EC, Organic carbon, NPK, soil testing for micronutrients, Gypsum requirements of soil, Lime requirement of soil, Uses of soil testing.

**Chapter 2: Water Testing**

Introduction, Types of Water, Water pollutants, role of water testing, common sampling tools and accessories, sample collection procedure, water quality parameters viz., pH, electrical conductivity, chlorides, sulphates, calcium, magnesium, sodium, potassium, Water quality indices and suitability.

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**Detail Syllabus: Practical**

**Part-I: Soil Testing**

1) To determine pH of given soil sample.
2) To determine salinity of given soil sample.
3) To determine nutrient content (NPK) of soil.
4) To determine micronutrient content of soil sample.
5) To determine electrical Conductivity of given soil sample.

**Part-II: Water Testing**

1) To determine total hardness of water.
2) To determine pH of given water sample.
3) To determine alkalinity of water.
4) To determine TDS of given sample of water.
5) To determine dissolved oxygen in water sample.
6) To determine conductivity of water sample.

## References:-


1. Low cost waste water treatment technologics-R. K. Trivedy and Siddharth Kaul
2. Standard Methods for the examination of water and waste water-APHA (Americal Public Health Association), AWWA (American Water Works Association), WEF (Water Environmental Federation)
3. Hydrology - Principles, analysis and Design - H. M Ragunath, New age International Publications.
4. An Introduction to Environmental pollution- B. K. Sharma and H. Kaur
5. Pollution and Bioremediation- PC. Trivedi


Member
(Representative)

Member
(Representative)

Subject Expert
(Other College)

Subject Expert
(Other College)

Coordinator
(Certificate Couse)

HoD/Chairperson
(Chairman)

COORDINATOR

HEAD
Department of Chemisty
PMT'S Arts Commerce & Science College, Shevgaon, Dist. A'Nagar

Principal
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