

E.M.G. YADAVA WOMENS COLLEGE, MADURAI -14.**(An Autonomous Institution – Affiliated to Madurai Kamaraj University)****Re –accredited (3rd cycle) with Grade A⁺ and CGPA 3.51 by NAAC****CBCS****DEPARTMENT OF CHEMISTRY – UG****ADD ON COURSE***(w.e.f. 2021 – 2022 onwards)***Water Analysis**

1. This Course is taken up by first year Chemistry students
2. Period of study : I Semester

COURSE STRUCTURE**Contact Hours: 30 hrs****Credit: 1**

S.No.	Sem	Subject Code	Title of the Paper
1.	I	21KAOC	Theory: Water Analysis
2.	I	21KAOCP	Practical: Lab in Water Analysis

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Water Analysis

Title of the Paper : Water Analysis

Semester : I

Subject Code : 21KAOC

Contact hours: 30hrs

Objectives:

1. To understand the fundamental concepts of water environment and water pollution.
2. To analyze the chemical and physical parameters in water sample
3. To gain knowledge about the measurement of toxic chemical substances
4. To acquire practical knowledge to find out the various parameters present in water samples
5. The practical course is in relevance to the theory courses to improve the understanding of the concepts

Unit I The aquatic environment - Marine environment – fresh water environment – Hydrosphere structure – uses of water – Sources of water –water in human body – water as a solvent

Unit II Water pollution – definition – Types and effects of water pollutants – Organic pollutants and inorganic pollutants

Unit III Water quality standards-Chemical and physical examination of water

Unit IV Measurement of Chemical substances affecting portability – colour – turbidity – pH – Electrical conductivity – Solids – Acidity – Alkalinity.

Unit V Analysis of Chemical Substances affecting Health – Ammonia – Sulphate – Fluoride-Measurement of toxic chemical substances – Cadmium – Lead – Copper.

Text Book:

1. Sharma B.K., “Industrial Chemistry: including chemical – engineering”, 16th Edition, Goel Publishing House, Meerut, 2011.

Reference Books:

1. De. A.K, “Environmental Chemistry”, New age International (P) Ltd, 6th Edition, New Delhi, 2006.
2. Kudesia V.P., “Environmental Chemistry”, Pragathi Prakashan, Meerut, 2003.
3. Mahajan S.P., “Pollution control in process industries”, Tata McGrawHill Education Pvt. Ltd., New Delhi, 2004.
4. Dara S.S., Dr.S.S Umare “A Text Book of Engineering Chemistry”, S.Chand & Co. New Delhi, 12th Edition, 2010.

PRACTICAL

Title of the Paper: Lab in Water Analysis

Subject Code : 21KAOCP

List of Experiments

1. Determination of pH of Water Sample
2. Determination of Total Dissolved Solids (TDS) of Water Sample
3. Determination of Conductivity and Salinity of water sample
4. Determination of Chloride by titration method
5. Determination of total alkalinity and acidity of a water sample.