

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 with OBE

DEPARTMENT OF CHEMISTRY – UG
ADD ON COURSE

Water Analysis
(w.e.f. 2022 – 2023 Batch onwards)

COURSE STRUCTURE

Contact Hours: 30 Hrs

Credit: 1

S.No.	Sem	Subject Code	Title of the Paper
1.	I	22CHAOC	Theory: Water Analysis
2.	I	22CHAOC P	Practical: Lab in Water Analysis

Department of Chemistry					Class: I B.Sc
Sem	Category	Course Code	Course Title	Credit	Contact Hours
I	Add on course	22CHAOC	Water Analysis	1	30
		22CHAOC P	Lab in Water Analysis		

Course 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

Course Content:

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- Sea water as a source of drinking water: Electrodialysis method, Reverse osmosis method.

Unit –II Water pollution – definition – Types and effects of water pollutants – Organic pollutants, inorganic pollutants, sediments, radioactive materials and thermal pollutants

Unit-- III Water quality standards-Chemical and physical examination of water -Measurement of Chemical substances affecting portability: Colour – Turbidity – pH – Electrical conductivity – Solids – acidity – alkalinity - free chlorine, dissolved chlorides – calcium –dissolved oxygen.

Unit—IV Analysis of Chemical Substances affecting health: Ammonia, sulphate, fluoride Measurement of toxic chemical substances: Cadmium, lead, Copper and Mercury

Unit --V Characteristics of industrial wastes-Types of industrial wastes- Treatment and disposal of industrial waste – Effluents and their purification: mechanical methods, physicochemical methods .

Book for study:

1. Sharma B.K., (2011). “*Industrial Chemistry: including Chemical – Engineering*”, 16th Edition, Goel Publishing House, Meerut.

Books for Reference:

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

PRACTICALS

List of Experiments

1. Determination of pH and Dissolved Oxygen 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.