



**DEPARTMENT OF
POLYMER CHEMISTRY
N.A.M COLLEGE
KALLIKKANDY**



CERTIFICATE COURSE Water Quality Concepts and Analysis.

2021-22

Offered by

**Department of Polymer Chemistry
NAM College Kallikkandy**

Course Details

The Certificate course in 'Water Quality - Concepts and Analysis.' is open to all students who have passed the Higher Secondary Examination in the science stream with Chemistry as one of the subjects.

This course helps the students to acquire knowledge in the physical and chemical parameters of water purity and compare these with international standards.

The course also aims to impart practical knowledge in testing the purity of water.

**The duration of
the course is 30 hrs.**

For Details and Registration:

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(Course Co-ordinator)**

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CCPC2101: WATER QUALITY – CONCEPTS AND ANALYSIS

CERTIFICATE COURSE

Academic Year: 2021 – 22

Course Duration: 30 hr

Syllabus and Course Structure

Learning Outcomes

- 1. Know the of chemical and physical parameters of water*
- 2. Understand the water quality and refinement techniques*
- 3. Obtain awareness of quality of water resources*
- 4. Attain hands-on knowledge of water quality parameters*

Unit 1: Chemical and physical parameters of water (5 hr)

Physical parameters: conductivity, turbidity, taste, odor and temperature. TDS and Chemical parameters. pH of water, minerals and metal ions in water resources. Water hardness, temporary and permanent hardness and its removal, hard water and soft water, removal of hardness.

Unit 2: Water Quality Assessment (6 hr)

detection of water quality, BOD COD, defluorination of drinking water, Rural technology for removal of iron from hand pumps, Biotic parameters. Assessment of colour and taste. Removal of radioactive substance from water, removal of dissolved minerals.

Unit 3: Quality of water in Indian rivers (4 hr)

National River Action Plan (NRAP), Central Ganga authority (CGA), 'Yamuna' action plan, Short summary of industries, steps to control Yamuna river pollutions, Kali river in Meerut. Arsenic in ground water in West Bengal, India, "GEMS' water programme

Unit 4: Practical (15 hr)

Measures of water hardness - magnesium and calcium, total hardness, alkalinity and chloride. Investigation of BOD and COD. Determination of physical parameters using water analyzer. Testing for biological parameters.

Evaluation pattern

Type of question and marks in the examination

	TOTAL Question	No.of questions to be answered	Marks of each question	Total marks
Very short answer	4	4	1	4
Short answer	5	3	2	6
Short essay/problems	4	2	3	6
Essay	2	1	4	4
Practical				12
				32

References

1. C. N. R. Rao, University General Chemistry, Macmillan, 3rd edn. John Wiley 2001
2. Environmental Chemistry, A. K. De.
3. Engineering Chemistry, Dr. B.K. Sharma
4. Essentials of environmental studies, S.P. Misra & S.N.Pandey
5. Environmental Chemistry, B. K. Sharma
6. G. D. Christian, Analytical Chemistry, John Wiley and Sons
7. Stocchi: Industrial Chemistry, Vol-1,, Ellis Horwood Ltd. UK
8. J. A. Kent: Riegel's Handbook of Industrial Chemistry, CBS Publishers, New Delhi.