

About the Course

The Certificate course in 'Water 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.

For Details and Registration

Please Contact:

Mr. Muhammad Ismayil K.M.

(Course coordinator & HOD)

Mob: 9526 113 145

Email: nampolymerchemistry@gmail.com

The duration of the course is 30 hrs.



DEPARTMENT OF POLYMER CHEMISTRY
NAM COLLEGE KALLIKKANDY



CERTIFICATE COURSE In Water Analysis

2020-21

Offered by
**Department of Polymer Chemistry
NAM College Kallikkandy**

CCPC01: CERTIFICATE COURSE IN WATER ANALYSIS

Syllabus and Course Structure
2020-21

Learning Outcomes

- 1. Understand the of chemical and physical parameters of water*
- 2. Know the water quality and purification techniques*
- 3. Get awareness of quality of water in Indian rivers and social movements*
- 4. Acquire practical knowledge of water quality parameters*

Course Duration: 30 hr

Unit 1: Water Parameters (5 hr)

Physical parameters: turbidity, temperature, taste and odor, conductivity. Total dissolved solid
Chemical parameters: pH of water, acidity and alkalinity, chloride, fluoride, sulphate and metal ions.
Water hardness, temporary and permanent hardness and its removal, Measures of water hardness, hard water and soft water, removal of hardness. International standards of physical and chemical parameters

Unit 2: Water Quality & Purification Techniques (6 hr)

Water quality- detection and estimation techniques, BOD COD, Magnetic water treatment technology, Rural technology for removal of iron from hand pumps, defluorination of drinking water. Biological parameters like bacteria, algae, viruses and protozoa. Removal of taste, colour and odor. Purification of Saline water. Removal of radio active substance from water, removal of dissolved minerals.

Unit 3: Quality of Water in Indian Rivers (4 hr)

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

Unit 4: Practical (15 hr)

Determination of physical parameters using water analyzer. Determination of hardness- calcium, magnesium, total hardness, alkalinity and chloride. Analysis of BOD and COD. 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. G. D. Christian, Analytical Chemistry, John Wiley and Sons
2. C. N. R. Rao, University General Chemistry, Macmillan, 3rd edn. John Wiley 2001
3. Environmental Chemistry, V P KUDESIA & RITU.
4. Environmental Chemistry, A. K. De.
5. Environmental Chemistry, B. K. Sharma
6. Essentials of environmental studies, S.P. Misra & S.N.Pandey
7. Engineering Chemistry, Dr. B.K. Sharma
8. Stocchi: Industrial Chemistry, Vol-1., Ellis Horwood Ltd. UK
9. J. A. Kent: Riegel's Handbook of Industrial Chemistry, CBS Publishers, New Delhi.