



Dempo Charities Trust's

DHEMPE COLLEGE OF ARTS & SCIENCE
Miramar, Panaji-Goa

Determination of Physico-chemical and Microbiological parameters in drinking Water

Course Objective:

To enable students to acquire knowledge and to estimate the different Physico-chemical and biological parameters in drinking water so as to determine whether water is hygienically safe and fit for consumption. Students are encouraged to bring water samples from their locality for analysis.

Course Contents:

- 1) Orientation course/ introduction to microbiological parameters of water.
 - 1.1 Water quality of drinking water
 - 1.2 Water quality standards
 - 1.3 Study of E.coli, Pseudomonas aeruginosa, and Salmonella Typhimurium
 - 1.4 Effect of micro-organisms on human health.
(1.1,1.2-1hr and 1.3,1.4-1hr)

- 2) Microbiological techniques (practicals)
 - 2.1 Sterilization techniques-Autoclaving, drying of apparatus, making cotton plugs, Laminar air flow, traditional way b/w burner—6 hrs
 - 2.2 Preparation of nutrient broth, Agars-control and samples---7 hrs
 - 2.3 Inoculation of sample, incubation time and detection of presence---8 hrs

- 3) Introduction to chemical parameters of water:
 - 3.1 Sources of water supply
 - 3.2 Water standards for domestic use-physical characteristics such as turbidity, colour, and odour.
 - 3.3 Chemical characteristics such as pH, chlorides, hardness, phosphates, nitrates, total dissolved solids, DO, total Fe content, Acidity, Alkalinity, sulphates, free CO₂, electrical conductivity.
 - 3.4 Aspects of water pollution.
 - 3.5 Treatment of water for domestic use.
(3.1, 3.2, 3.3-----1 hr and 3.4, 3.5-1 hr)

4) Chemistry practicals:

- 4.1 –Determination of colour, odour, taste, pH, turbidity and total dissolved solids—2 hrs
- 4.2 Total Acidity, total Alkalinity, chlorides and free CO₂—2 hrs
- 4.3 Total hardness, calcium content, sulphates and nitrates —2 hrs
- 4.4 Total Fe content, total phosphorous —2 hrs

Course outcome: Students after completing this course gain adequate knowledge to conduct analysis of water samples in their locality to test the potability of water and thus serve the community in the larger interests.

References: ---

1)--Handbook of Water and waste water analysis by Kanwaljit Kaur

2)-Physico-Chemical Examination of water, sewage and Industrial effluents

by N. Manivasakam

Determination of Physico-Chemical Parameters of water Sample

Non-Conventional Course LONG TERM COURSE (CHEMISTRY & ZOOLOGY) 2017-18

Sr. No.	Name	21-03-19	22-03-19	26-03-19	27-03-19	28-03-19	29-03-19
1	Diksha D Prabhu Gaonkar	<u>Diksha</u>	<u>Diksha</u>	<u>Diksha</u>	<u>Diksha</u>	<u>Diksha</u>	<u>Diksha</u>
2	Aditi A Sathe	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>
3	Sarfraj M.H Rehmanavar	<u>Sarfraj</u>	<u>Sarfraj</u>	<u>Sarfraj</u>	<u>Sarfraj</u>	<u>Sarfraj</u>	<u>Sarfraj</u>
4	Tanvi Narvekar	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>
5	Namisha Pednekar	<u>Namisha</u>	<u>Namisha</u>	<u>Namisha</u>	<u>Namisha</u>	<u>Namisha</u>	<u>Namisha</u>

U.Saha
Convenor
Skill development
courses

2019 Term Course
Determination of Physicochemical Parameters of water
(2017-18)

Class 11th
Month Sept, Oct, Nov

NAME	Roll No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL ATTENDANCE	
Priya Barla	1																																	
Krutika K. Naik	2																																	
Kavita Yeram	3																																	
Nikita Shingarihar	4																																	
Sohail Shukla	5																																	
Namisha Pedurkar	6																																	
Tanvi Karvekar	7																																	
Misha Xec	8																																	
Preeti Bhavalya	9																																	
Savitra Koli	10																																	
Disha D. Prabhuganbar	11																																	
Aditi Sathre	12																																	
Sargam Rahamanwar	13																																	
Disha Koush	14																																	
Gauri Gauri	15																																	

Determination of hardness Ca mg
 Determination of dissolved O₂
 Determination of Acidity
 Determination of Alkalinity
 Determination of free CO₂
 Determination of Chloride and pH
 Determination of Iron
 Determination of Sulphate
 Lecture
 Lecture

[Signature]
Coordinator
G.D. Dames

Department of Chemistry

Report of the long term non-conventional course entitled “Determination of physicochemical and microbiological parameters in drinking waters” for the academic year 2017-18.

The department of chemistry conducted a long term integrated (faculty of Chemistry and zoology) value added non-conventional course entitled “Determination of physicochemical and microbiological parameters in drinking waters” for SY BSC students.

Duration of the course is of 33 hours which comprises of 4 sessions of lectures of one hour each and 29 hours of practical sessions. The intake capacity for the course is 25 students with a fee of Rs 1000/- per student. This year 15 students were enrolled for the course.

The course syllabus includes introduction to microbiological and physico-chemical parameters of drinking water, in addition there are practical sessions of determination of microbiological as well as physical and chemical parameters of drinking waters. Course objective is to equip students with practical knowledge of determination of water quality to qualify whether water is hygienically safe and fit for consumption.



Mrs Varsha Virginkar
Course Coordinator