



Dempo Charities Trust's

DHEMPE COLLEGE OF ARTS & SCIENCE  
Miramar, Panaji-Goa

Determination of Physico-chemical and Microbiological parameters in drinking Water

### **CourseObjective:**

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.

### **CourseContents:**

- 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 aeroginasa,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 CO<sub>2</sub> ,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 CO<sub>2</sub>—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

**Attendance of students for Summer Course in Determination of Physico-chemical and Microbiological parameters in drinking Water held in April 2016**

Serial No	Name	Roll No	16/4/16	17/4/16	18/4/16	19/4/16	20/4/16	21/4/16	23/4/16
1	Rhydema Morajkar	14046	P	P	P	P	P	P	P
2	Chandravati Talwar	14039	P	P	P	P	P	P	P
3	Minoshka Silveira	14037	P	P	P	P	P	P	P
4	Mahbubbi Defedar	14009	P	P	P	P	P	P	P
5	Tejaswini S. Velkar	14044	P	P	P	P	P	P	P
6	Sangita Gowda	14016	P	P	P	P	P	P	P
7	Ruchira Potekar	14035	P	P	P	P	P	P	P
8	Rupesh Mopkar	14028	P	P	P	P	P	P	P
9	Rahul kumar Gupta	14017	P	P	P	P	P	P	P
10	Suleman Shaikh	14026	P	P	P	P	P	P	P
11	Satyajit D. Pereira	14010	P	P	P	P	P	P	P
12	Samreen A. Khan	14022	P	P	P	P	P	P	P
13	Laxmi S. Kelkar	14021	P	P	P	P	P	P	P
14	Sonam S. Lotlikar	14170	P	P	P	P	P	P	P
15	Pramila S. Naik	14031	P	P	P	P	P	P	P
16	Kailas Chandh N.R	14117	P	P	P	P	P	P	P
17	Silma Rodrigues	14108	P	P	P	P	P	P	P
18	Gaurish Sawant	14153	P	P	P	P	P	P	P
19	Zia Shaikh	14148	P	P	P	P	P	P	P
20	Lennox Rodrigues	14154	P	P	P	P	P	P	P

(2hrs)  
(2hrs)  
(4hrs)  
(4hrs)  
(8hrs)  
(7hrs)  
(6hrs)

*S. S. S.*  
23/4/16  
Course Co-ordinator

## Department Of Chemistry

Report of the long term non-conventional course in “Determination of physicochemical and microbiological parameters in drinking waters”

The department of chemistry will be conducting 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 FY and SY BSC students in April 2016.

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 20 students with a fee of Rs 1000/- per student.

The course syllabus includes introduction to microbiological and 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 so as to qualify whether water is hygienically safe and fit for consumption.

