

Water Quality (Chemical & Microbiological) Hands on Training for graduate students October-December, 2018 (3 days training)

This specialized course is developed to familiarize students with the physio-chemical and microbiological analysis of environmental water.

1. The introduction of water chemistry fundamentals that require for problem analysis related to water
2. The introduction of unifying concepts of microbiology relating to water, which is the most common and significant sources of infectious diseases caused by microbial contamination
3. The methods of water analysis and the analytical instruments used to measure the quality of water focusing on the basic concepts of water chemistry and microbiology and how to assess their quality.

Topics covered include:

Water Chemistry: This course provides an introduction to the study of water chemistry. The focus is on chemistry fundamentals that water operators require for problem analysis related to water treatment. Areas of study include: pH; alkalinity; and inorganic (metals and non-metals, anion/cations) and others chemicals found in water. Practical examples of removal and treatment of chemicals found in water are provided.

Water Microbiology: The goal of this course is to introduce students, the unifying concepts of microbiology related to water, and the most common and significant sources of infectious diseases caused by microbial contamination. Students explore the types of microorganisms to be assessed, their routes of exposure and modes of action, as well as their effects on human health and the environment.

Water Quality and Management: This course introduces students, the water quality challenges and issues. Students learn to identify water quality and quantity hazards and vulnerabilities. Using this data, students develop risk assessments and response plans to mitigate hazards through water system design, operations, and management.

Key Learning Objectives

- To provide theoretical basis of water analysis and learn each testing parameter through hands-on experience.
- To provide hands-on training using the latest analysis techniques, instruments and methods to analyzed water samples

Learning Outcomes:

- Develops analytical skill in water sample analysis and interpretation of water quality data
- Gaining practical experience in using updated techniques and water quality measuring equipment for measurements.
- Upon completion participants will receive a certificate of participation.

Course Duration: 3 days

Means of training:

- 1) Theoretical

- Significance of drinking water tests.
- Theoretical basic for drinking water analysis.
- Assessing the quality of drinking water.

2) Practical Work

i) Microbiological Quality:

Water Sampling Procedures for microbiological testing:

To enable mixing of the sample in the laboratory before processing, leave ample air space (at least 2.5cm) above liquid level. Collect samples that are representative of the water being tested. Keep container closed until ready to sample. Do not contaminate inner surface of lid. Flush sample ports. Then fill container without rinsing using aseptic technique to avoid sample contamination. Close container immediately.

- Total aerobic bacterial count
- Total coliform count
- Indicator organisms for pathogen presence

ii) Physical quality:

-turbidity, conductivity, total dissolved solids etc

iii) Chemical Quality:

- pH, dissolved oxygen, Chloride, phosphates, chemical oxygen demand, biological oxygen demand, mineral impurities, and heavy metal etc.

Course registration fee:

Tk 10,000/- per participant

Course calendar 2018

October, 2018	7-10 (Sun-Wed)	14-17 (Sun-Wed)	21-24 (Sun-Wed)	28-31 (Sun-Wed)
November, 2018	4-7 (Sun-Wed)	11-14 (Sun-Wed)	18-21 (Sun-Wed)	25-28 (Sun-Wed)
December 2018	2-5 (Sun-Wed)	9-12 (Sun-Wed)	17-20 (Mon-Thu)	23-27 (Sun-Thu)

Venue: WAFFEN RESEARCH LABORATORY, 190/A, Tejgoan-Gulshan Link Road, Dhaka

How to apply?

- Pre-registration is required. The candidates have to apply through e-mail waffenbd@gmail.com or call 01933852655 or 01716494922 in advance to the Director, WAFFEN RESEARCH LABORATORY, 190/A, Tejgoan-Gulshan Link Road, Dhaka.
- Copies of the certificates regarding, qualification and experience may also be attached.
- Application must reach us before the commencement of the respective training.
- The applicants can also deposit the amount by cash in the office prior to respective training.
- No online transaction of the money is entertained.

Note:

- Intake of participants will be on first come first serve basis. **Only 10 students per batch can be accommodated.**
- Participants will be given lunch and refreshments during the training periods.
- The participants will be given a course completion certificate upon successful completion of the training programme.

Course Instructors:

- 1) **Mr. Latiful Bari, PhD** in Food Microbiology and Hygiene and 20 years research and academic background in food safety and food hygiene, and specialties in microbiological hazard analysis in food, feed and water.
- 2) **Ms. Sharmin Zaman, Ph.D.** in Environmental Microbiology with specialty in water quality and safety analysis, and 5-year R & D experiences in Food, Feed, Soil and Water microbiology.
- 3) **Mr. Abu Bakkar Siddique:** BSc (hon's) and MSc in Applied Nutrition and Food Technology with 11 years quality control experiences of Food and feed laboratories. And specialties with biochemical and chemical analysis of water food and feed.
- 4) **Md. Sunzid Ahmed, BSc (Hons) & MSc** in Microbiology, 4 years laboratory research experiences in food feed and water research.

**Food Microbiology Training courses for graduate students
October-December, 2018 (3 days training)**

Day 1 (10:00 AM to 5:00 PM)

- Introduction of GLP (Good Laboratory Practices) in food Microbiology. Demonstration of GLP and hands on training for maintenance of GLP.
- Preparation of media, dilution solutions and other reagents for Aerobic bacterial count.

Day 2 (10:00 AM to 5:00 PM)

- Introduction of microorganisms and hands on training on sample preparation, media preparation and other reagents preparation of total coliform count and fecal coliform count, and *E. coli*.
- Preparation of media, dilution solutions and other reagents and sterilization for next day experiments

Day 3 (10:00 AM to 5:00 PM)

- Result analysis, calculations and mistake analysis and justification analysis
- Introduction of total aerobic bacteria, total coliforms, fecal coliforms & presence/absence of *E. coli* & in food & water samples.
- Result analysis, calculations and mistake analysis and Justification analysis of total aerobic bacteria, total coliforms, fecal coliforms, presence/absence of *E. coli*.
- Report writing and preparation of materials and reagent for competency study.

The following handouts will be supplied & the trainees must attend each theoretical class before each experiment:

- 1) Introduction of food chain and critical control points of safety
- 2) Water microbiology and safety
- 3) Distribute handouts for pathogens
- 4) Distribute methodology for the determination of each microorganism.
- 5) Demonstration of GLP (Good Laboratory Practices) and hands on training for maintenance of GLP during practice at the laboratory.

Course registration fee:

Tk 10,000/- per participant

Course calendar 2018

October, 2018	7-9 (Sun-Tue)	14-16 (Sun-Tue)	21-23 (Sun-Tue)	28-30 (Sun-Tue)
November, 2018	4-6 (Sun-Tue)	11-13 (Sun-Tue)	18-20 (Sun-Tue)	25-27 (Sun-Tue)
December 2018	2-4 (Sun-Tue)	9-11 (Sun-Tue)	17-19 (Mon-Wed)	23-26 (Sun-Wed)

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- 8) **Md. Sunzid Ahmed, BSc (Hons) & MSc** in Microbiology, 4 years laboratory research experiences in food feed and water research.

Hand on training program on food adulteration for students October-December, 2018 (every Saturday)

This short and extensive training course is designed to familiarize with adulterants in following Food Categories:

1. Milk and milk products,
2. Spices,
3. Food grains and their products
4. Sweetening Agents.
5. Oil and Fats

Who should attend?

Any person who is interested

Course Duration

1 day

Topics covered

This specialized course focus on the presence of adulterant in any of the above mentioned food products.

Key Learning Objectives

- To provide theoretical basis of adulteration test of food products and learn adulteration testing methods of food through hands-on experience.
- To provide hands-on training using the latest analysis techniques, instruments and methods to analyzed food samples

Learning Outcomes:

- Develops analytical skill on testing adulteration in foods and interpretation of the data.
- Gaining practical experience in using techniques to determine the presence of adulterations in foods.
- Upon completion participants will receive a certificate of participation.

Means of training:

3) Theoretical

- Significance of adulteration tests.
- Theoretical basic chemistry of different adulterant in food.
- Methods of adulterant analysis.

4) Practical Work

i) Chemical qualitative methods:

Course registration fee:

Tk 3,000/- per participant

Course calendar 2018

September, 2018	x	x	x	22 (Saturday)
October, 2018	6 (Saturday)	13 (Saturday)	20 (Saturday)	27 (Saturday)
November, 2018	3 (Saturday)	10 (Saturday)	17 (Saturday)	24 (Saturday)
December 2018	1 (Saturday)	8 (Saturday)	15 (Saturday)	22 (Saturday)

Venue: WAFFEN RESEARCH LABORATORY, 190/A, Tejgoan-Gulshan Link Road, Dhaka

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