

Training Institute For Chemical Industries

Polash, Narsingdi, Bangladesh

(Central Training Institute of BCIC)



Certificate

This is to certify that

Saklain Niam

has successfully completed the training course on

Quality Control &

Unit Operation in Food Industry

of 04 (Four) week(s) duration conducted by this Institute

from 07-01-2023 to 02-02-2023

He/She obtained grade A⁻ in the final evaluation.

Date: 02 February, 2023


Executive Director

Gradation Criteria :

A⁺ = 80% & above, A = 75 ~ <80%, A⁻ = 70 ~ <75%, B⁺ = 65 ~ <70%, B = 60 ~ <65%,
B⁻ = 55 ~ <60%, C⁺ = 50 ~ <55%, C = 45 ~ <50%, D = 40 ~ <45%, F = Below 40%

(Course Outline overleaf)

Course Outline

Analytical Chemistry & Environmental Science (72 Hours)

Quality control (04 hours): Introduction to Quality Control & Quality Assurance; Analytical Method Validation.

Industrial application of classical analysis (02 hours): Viscosity measurement of oil/ transparent liquid.

Analysis of industrial water (06 hours): Preparation & standardization of solutions for titrimetric analysis. Determination of Alkalinity & Acidity in potable water; Determination of mineral content- Ca, Mg in potable water

Quality testing methods in food industries (26 hours): Estimation of protein by Kjeldahl method; Estimation of Antioxidant; Ascorbic acid and pectin content in fruits; Estimation of fat in milk/ice cream/powder milk; Quantitative measurement of preservatives (E-201) in Food; Food adulteration, Iodine in common salt, hydrous test in sugar, coloring matter in butter; Estimation of Polyphenol/ carotene in fruit and vegetables; Determination of Acid number, Saponification & Peroxide value; Estimation of caffeine in tea/ coffee/ cola drink; Determination of total sugar in beverage using polarimeter; Estimation of Ayl isothiocyanate in Mastered oil.

Spectrometric methods of analysis (14 hours): Principles & instrumentation of a Uv-Vis spectrometer; Determination of Na & K in green coconut by Flame Photometer; Operation & Calibration of UV/Vis Spectrophotometer; Qualitative test of olive oil by UV-Vis Spectrophotometer; Determination of trace & toxic elements by ICP-OES; Micronutrient / Protein-N analysis by EDXRF; Identification of food packaging materials by FTIR.

Chromatographic methods of analysis (08 hours): Chromatographic Methods of Analysis; Operation of GC & GC-MS; Determination of caffeine in cola drinks by HPLC.

Pollution control in food industries (12 'hours): Wastewater treatment system; Measurement of pollution parameters: DO, BOD & COD in wastewater; Microbiological test of waste water; Operation of environmental pollution instrument.

Operation & Process Technology (18 Hours)

Unit operations in the process industry: Process symbol and process diagram; Practice on process symbol and process diagram; Operation of water treatment plant (Ion exchange); Pump: Operational behavior and characteristics; Control of process parameters using SCADA & PID; Boiler & Heat Exchanger; Solid Handling & Absorption; Evaporation & Crystallization.

Instrumentation & Control Engineering (02 Hours)

Advanced process control (basic thought): Process automation through PCL.

Mechanical Engineering (04 Hours)

Mechanical equipment in industry: Operation & Demonstration of refrigeration system; Demonstration of pipe fittings and valves.

Industrial Safety & Health (06 Hours)

Safety measures in the process industry: Introduction to Industrial Safety; Fire hazard & Fire protection arrangement; Explosion hazard & Personal protective equipment.

Others (04 Hours)

National Integrity Strategy (NIS); Accounts and Finance in Industrial Sector.