TRAINING PROGRAM

Basic Principal Of Analytical Chemistry

Introduction:

The good and advance analytical laboratory can motivate dispirited teams of chemists and technicians to accomplish high quality work. It is very important for lab staff to learn how to create the success in their lab. The course is designed to provide an introduction and practical application of analytical chemistry in the laboratory. It is designed also to understand concepts of basic principal of analytical chemistry, and how to apply quality standards, how to do health and safety risk assessments, how to develop the technical, and methods in the lab and how to evaluate the lab results.

Who Should Attend?

The course is of interest for all Laboratory staff, Chemists and technicians

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

Course Objectives:

By the end of this course delegates will be able to:

- Understand how understand basic principal of analytical chemistry
- Provide an understanding of the roles of quality standards, how to develop the technical, and methods in the analytical lab and how to evaluate the lab results.

Course Outline:

- Introduction
- Chemistry Historical and review
- Basic Principal and theory
    - ❖ Atoms, Molecules, and ions
    - ❖ Chemical Bonding
    - ❖ The periodic table
    - ❖ Light, Photon Energies, and Atomic Spectra
    - ❖ Matter and Measurements
    - ❖ Units, Measuring
    - ❖ Accuracy, Precision, and Significant Figures in Measurement
    - ❖ Units for Expressing Concentration
    - ❖ Electronic Structure of Matter

  - ❖ Physical Properties of Matter
  - ❖ Chemistry of the Element
  - ❖ Chemistry in solution
  - ❖ Acid-Base Chemistry
  - ❖ Solvent types and properties
  - ❖ Solubility of ionic substances
  - ❖ Le Chatelier's Principle
  - ❖ Chemical Reactions in Solution
  - ❖ Physical Behavior of Solutions
- Planning to Work in the Laboratory
- The Sampling Plan, Sample Collection and Preparation
- Choosing the Right Instrument
- The Evaluation of Results and Methods
- Data Analysis
- Laboratory Report
- Quality Control and Quality Assurance