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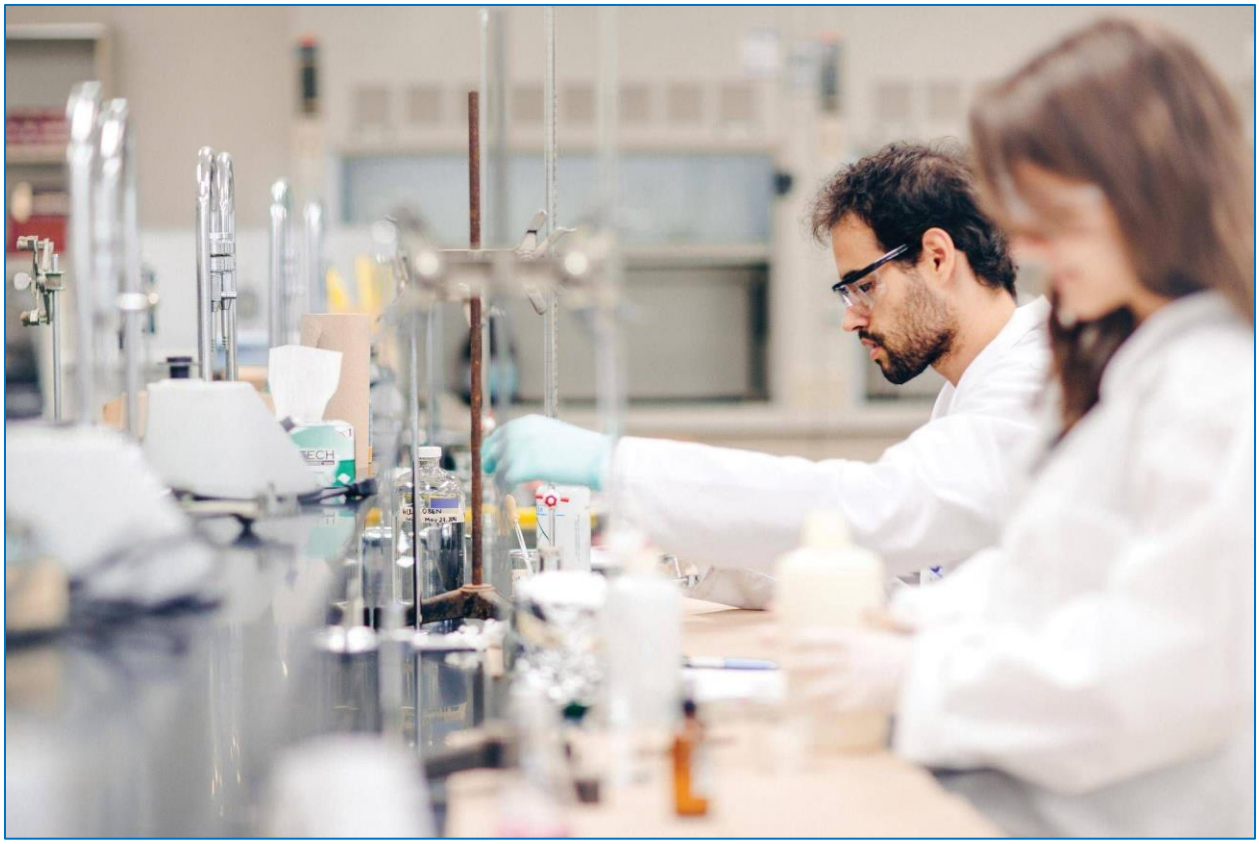

AL038S1:
Chemistry for Lab Technicians

Training Description:

This **Chemistry for Lab Technicians** is a critical component of a successful laboratory operation. It provides technicians with the essential knowledge and skills to perform their duties accurately, safely, and efficiently. Through chemistry training, technicians gain a deep understanding of chemical principles, properties, and reactions. This knowledge enables them to:

- **Handle hazardous materials** with confidence and competence, minimizing the risk of accidents and ensuring workplace safety.
- **Perform laboratory procedures** accurately and precisely, producing reliable and reproducible results.
- **Interpret data** correctly and effectively, drawing meaningful conclusions from experimental observations.
- **Contribute to scientific research** by providing essential technical support and expertise.

Moreover, chemistry training can enhance technicians' career prospects. A strong foundation in chemistry can lead to opportunities for advancement within the laboratory and open doors to new career paths in related fields.

In conclusion, **Chemistry for Lab Technicians** is an invaluable investment that benefits both individuals and organizations. By equipping technicians with the necessary knowledge and skills, this training ensures the safe, efficient, and accurate operation of laboratories, contributing to scientific progress and innovation.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand basic chemical concepts and terminology
- ✓ Identify common laboratory equipment and their uses
- ✓ Learn about safety procedures in a laboratory setting

Training Designed for:

This course is intended for Lab technicians with limited or no chemistry background, New hires in laboratory roles and Individuals seeking to refresh their chemistry knowledge.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

FIVE DAYS:

- ❖ Introduction to Chemistry and Laboratory Safety
  - Introduction to Chemistry:
    - Definition of chemistry

- Branches of chemistry
- Importance of chemistry in laboratory work

- Laboratory Safety:
  - General safety rules
  - Personal protective equipment (PPE)
  - Handling of hazardous materials
  - Emergency procedures

❖ Basic Chemical Concepts
- Matter and its Properties:
  - States of matter
  - Physical and chemical properties
  - Elements, compounds, and mixtures
- Atomic Structure:
  - Atoms, protons, neutrons, and electrons
  - Periodic table of elements
  - Electron configurations
- Chemical Bonding:
  - Ionic and covalent bonding
  - Lewis dot structures

❖ Chemical Reactions and Stoichiometry
- Types of Chemical Reactions:
  - Combination, decomposition, single-replacement, double-replacement, combustion
- Balancing Chemical Equations:
  - Law of conservation of mass
  - Balancing techniques
- Stoichiometry:
  - Mole concept
  - Mole-to-mole, mole-to-mass, mass-to-mass calculations
  - Limiting reactants and excess reactants

❖ Solutions and Acids/Bases
- Solutions:
  - Concentration units (molarity, molality, percent composition)
  - Dilution calculations
  - Solubility and solubility rules
- Acids and Bases:
  - Definitions of acids and bases (Arrhenius, Brønsted-Lowry)
  - pH scale
  - Acid-base titrations

❖ Laboratory Techniques and Analytical Chemistry
- Common Laboratory Techniques:
  - Weighing and measuring
  - Pipetting
  - Filtration and decantation
  - Chromatography

- Spectroscopy
- **Analytical Chemistry:**
  - Qualitative and quantitative analysis
  - Gravimetric analysis
  - Volumetric analysis
  - Instrumental analysis

❖ Course Conclusion
❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:
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