



External Training Course

Chemical Laboratory Operations & Analytical Techniques

From 12 May To 16 May 2025

From 21 Jul. To 25 Jul. 2025

From 20 Oct. To 24 Oct. 2025

**Radisson Blu Hotel, Amsterdam City
Center, Netherlands**

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External Training Course:

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Fees: 1950 KD

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Course Overview

This comprehensive training program is designed to develop the technical knowledge and operational skills required for chemical laboratory professionals working in the oil, gas, petrochemical, and industrial sectors. The course focuses on laboratory operations, safety practices, advanced analytical techniques, and best practices for ensuring quality, accuracy, and compliance in laboratory testing and analysis. Participants will gain practical knowledge of laboratory equipment handling, testing methods, troubleshooting, reporting, and international laboratory standards.

Course Objectives

Upon completion of this course, participants will be able to:

- Operate laboratory equipment safely and effectively.
- Apply advanced chemical testing and analysis techniques.
- Perform accurate sampling, testing, and result interpretation.
- Identify and mitigate laboratory operational risks.
- Ensure quality control and compliance with laboratory standards.
- Optimize laboratory workflow and improve productivity.

Target Audience

This course is essential for:

- Laboratory Chemists & Analysts.
- Laboratory Supervisors & Technicians.
- Quality Assurance & Quality Control Personnel.
- HSE Laboratory Safety Officers.
- Chemical Engineers involved in Laboratory Operations.
- Professionals in Oil, Gas, Petrochemical, and Process Industries.

Course Content & Modules

Module 1: Chemical Laboratory Operations Essentials

- Laboratory Layout & Workflow Management.
- Equipment Handling & Preventive Maintenance.
- Laboratory Safety Rules & Emergency Response.
- Chemical Storage, Labeling & Waste Management.

Module 2: Sampling & Sample Preparation Techniques

- Sampling Procedures for Liquids, Solids & Gases.
- Sample Preservation & Contamination Prevention.
- Best Practices in Sample Handling & Transport.

Module 3: Analytical Techniques & Testing Methods

- Titration Techniques & Gravimetric Analysis.
- Spectrophotometry (UV-VIS, IR, AAS).
- Chromatography Methods (GC, HPLC, IC).
- Advanced Instrumental Analysis.

Module 4: Laboratory Quality Control & Assurance

- Standard Operating Procedures (SOPs) Development.
- Calibration & Validation of Equipment.
- Error Detection, Correction & Root Cause Analysis.
- Laboratory Quality Control Charts & Data Interpretation.

Module 5: Reporting & Documentation in Laboratory Operations

- Test Report Preparation & Review Procedures.
- Laboratory Data Integrity & Traceability.
- Documentation Control & Record Keeping.
- Compliance with ISO/IEC 17025 & International Standards.

Training Methodology

Expert-Led Technical Lectures.
Practical Exercises & Case Studies.
Hands-On Demonstrations.
Interactive Group Discussions.
Laboratory Risk Assessments & Safety Drills.

Course Benefits

Participants will leave this program with:

- Enhanced Technical Skills for Laboratory Testing.
- Improved Laboratory Operational Efficiency.
- In-Depth Knowledge of Modern Analytical Techniques.
- Compliance Awareness of Laboratory Standards.
- Readiness for Laboratory Audits & Inspections.

American Global

Institute for Private Training

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Course Details & Agenda:

1st Day Agenda

8.30	9.00	Opening Remarks (30 Min.).
9.00	11.30	<u>DISCUSS COURSE TOPICS:</u> <ul style="list-style-type: none"> • Chemical Laboratory Operations Essentials. • Sampling & Sample Preparation Techniques. • Analytical Techniques & Testing Methods. • Laboratory Quality Control & Assurance. • Reporting & Documentation in Laboratory Operations.
11.30	12.00	Coffee Break
12.00	15.00	<u>Chemical Laboratory Operations Essentials:</u> <ul style="list-style-type: none"> • Laboratory Layout & Workflow Management. • Equipment Handling & Preventive Maintenance. • Laboratory Safety Rules & Emergency Response. • Chemical Storage, Labeling & Waste Management.
15.00	15.30	Questions and Discussion
15.30		Buffet Lunch

2nd Day Agenda

9.00	11.30	<u>Sampling & Sample Preparation Techniques:</u> <ul style="list-style-type: none"> • Sampling Procedures for Liquids, Solids & Gases. • Sample Preservation & Contamination Prevention.
11.30	12.00	Coffee Break
12.00	15.00	<u>Sampling & Sample Preparation Techniques:</u> <ul style="list-style-type: none"> • Best Practices in Sample Handling & Transport.
15.00	15.30	Questions and Discussion
15.30		Buffet Lunch

3rd Day Agenda

9.00	11.30	<u>Analytical Techniques & Testing Methods:</u> <ul style="list-style-type: none"> • Titration Techniques & Gravimetric Analysis. • Spectrophotometry (UV-VIS, IR, AAS).
11.30	12.00	Coffee Break
12.00	15.00	<u>Analytical Techniques & Testing Methods:</u> <ul style="list-style-type: none"> • Chromatography Methods (GC, HPLC, IC). • Advanced Instrumental Analysis.
15.00	15.30	Questions and Discussion
15.30		Buffet Lunch

4th Day Agenda

9.00	11.30	<u>Laboratory Quality Control & Assurance:</u> <ul style="list-style-type: none"> • Standard Operating Procedures (SOPs) Development. • Calibration & Validation of Equipment.
11.30	12.00	Coffee Break
12.00	15.00	<u>Laboratory Quality Control & Assurance:</u> <ul style="list-style-type: none"> • Error Detection, Correction & Root Cause Analysis. • Laboratory Quality Control Charts & Data Interpretation.
15.00	15.30	Questions and Discussion
15.30		Buffet Lunch

5th Day Agenda

9.00	11.30	<u>Reporting & Documentation in Laboratory Operations:</u> <ul style="list-style-type: none"> • Test Report Preparation & Review Procedures. • Laboratory Data Integrity & Traceability.
11.30	12.00	Coffee Break
12.00	15.00	<u>Reporting & Documentation in Laboratory Operations:</u> <ul style="list-style-type: none"> • Documentation Control & Record Keeping. • Compliance with ISO/IEC 17025 & International Standards.
15.00	15.30	Questions, Discussion & Conclusion Training Course.
15.30		Buffet Lunch