

COURSE OVERVIEW LE0430-4D Modern Laboratory Safety & Health

Course Title

Modern Laboratory Safety & Health

Course Date/Venue

November 18-21, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi,

(24 PDHs)

AWARI

UAE

Course Reference

LE0430-4D

Course Duration/Credits

Four days/2.4 CEUs/24 PDHs

Course Description



This practical and highly-interactive course includes practical sessions and exercises where participants will visit the laboratory and they will be introduced to various lab instruments and their calibration process. Practical sessions will be performed using one of the lab equipment in order to apply the theory learnt in the class.



This course is designed to provide delegates with detailed and up-to-date overview of modern laboratory safety and health. It covers systematic safety and health techniques for laboratory, the recent OSHA regulations applying to the laboratory environment and OSHA formaldehyde standards applicable to analytical laboratories. Participants will be able to learn how to work safely with formaldehyde as well as to identify the requirements, guidelines and procedures in planning for laboratory emergencies and acquire knowledge on the various types of emergencies, alarms and warning systems, fires, explosions and chemical spills.



The course will discuss how contamination occurs and how it can be prevented and carryout safe work practices including Material Safety Data Sheets (MSDS), laboratory ergonomics and safe handling of laboratory glassware.

Function, proper use and importance of laboratory hoods, operations of safety showers and eye washes and electrical safety in the laboratory will also be discussed during the course.





















Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- · Apply systematic safety and health techniques for laboratory and explain the recent OSHA regulations applying to the laboratory environment
- Explain the OSHA formaldehyde standards applicable to analytical laboratories and learn how to work safely with formaldehyde
- Identify the requirements, guidelines & procedures in planning for laboratory emergencies and acquire knowledge on the various types of emergencies, alarms & warning systems, fires, explosions and chemical spills
- Discuss how contamination occurs & how it can be prevented and carryout safe work practices
- Analyze Material Safety Data Sheets (MSDS), what information can be found in them and how they should be used
- Implement laboratory ergonomics and discuss how ergonomic problems can occur as well as how to avoid them
- Use a system approach in handling compressed gas cylinders safely, list the different hazards of compressed gases, work safely with flammables & explosives and demonstrate how to transport & store flammables & explosives
- Employ safe handling of laboratory glassware and emphasize how to use & maintain laboratory glassware safely
- Describe the function, proper use and importance of laboratory hoods and explain the operations of safety showers and eye washes as well as when & how they should be used
- Discuss electrical safety in the laboratory and discuss how electricity functions and how to work with it safely

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive "Haward Smart Training Kit" (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes electronic version of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a Tablet PC.

Who Should Attend

This course covers systematic techniques and methodologies on modern laboratory safety and health for laboratory managers, supervisors, chemists, chemical engineers, analysts, instrumentation engineers, safety and HSE professionals and other laboratory technical staff. Further, the course is essential for all R&D personnel.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.





















Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -



The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **2.4 CEUs** (Continuing Education Units) or **24 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.



British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK[®] (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

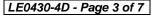
Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.



















Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Pete Du Plessis is a Professional Quality Management Consultant with over 25 years of extensive experience. expertise lies extensively in the areas of **Laboratory Quality** Management (ISO17025), Modern Laboratory Management, Laboratory Information Management System (LIMS), Project Management, Human Resource Management, Financial Management, Advance Planning & Budgeting Control, Document

Management, Record Management, Contract Management, Negotiation Management, Risk Management, Leadership & Business Management, Production & Inventory Management, Warehousing, Purchasing & Marketing Management, Work Engineering & Advanced Production Techniques, Production Logistics, Supply Chain Management, Fleet Management, Stores & Stock Control, Human Resources & Industrial Relations Management, Quality Assurance & Control, Operations Management, Project Management, and Strategic Planning & Management. Previously, he was the Quality Manager of Benteler Automotive, where he was responsible for implementing, controlling and managing quality and technical department processes and systems and mobilizing the quality control department, procedures and quality management system.

During his career life, Mr. Du Plessis has worked with several prestigious companies occupying numerous challenging managerial and technical positions such as being the Certified Auditor, Financial Manager, Operations Manager, Technical & Quality Manager, Logistics & Purchasing Manager, Head Metrologist, Quality Engineer, Project Engineer, Materials & Warehouse Planner & Controller and Quality Control Inspector. All throughout his career, he has mastered and specialized in the application of project management, warehouse & inventory control, value chain analysis, logistics & strategic planning, process flow analysis, business process evaluation & re-engineering, master-plan development, capacity planning and site space-planning & development.

Mr. Plessis has Bachelor degree with Honours in Industrial Engineering & Management. Further, he has gained Diploma in Quality & Production Management. He is also a Certified Assessor & Moderator with the Manufacturing, Engineering & Related Services Education and Training Authority (MERSETA), a Certified Trainer/Assessor by the Institute of Leadership & Management (ILM) and a Certified Instructor/Trainer.

Training Methodology

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

30% Lectures

20% Workshops & Work Presentations

30% Case Studies & Practical Exercises

20% Software, Simulators & Videos

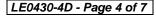
In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.



















Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Monday, 18th of November 2024

Day 1:	Monday, 16" Of November 2024
0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & introduction
0815 - 0830	PRE-TEST
0830 – 0930	Introduction Course Overview • Analytical Laboratories – Size & Types • Analytical Laboratories – Classification • Analytical Laboratories – Divisions • Safety & Safety Management
0930 - 0945	Break
0945 – 1100	Orientation to Laboratory Safety Recent OSHA Regulations Applying to the Laboratory Environment • Material Safety Data Sheets • Planning Experiments • Personal Protective Equipment • Safe Handling of Glassware • Housekeeping • Ventilation Controls • Chemical Storage • Handling Compressed Gases • Labeling • Waste Disposal • Accidents and Emergencies • Safety Showers and Eye Washes
1100 - 1130	VIDEO: Orientation to Laboratory Safety
1130 – 1230	The OSHA Formaldehyde Standard Health Hazards Associated with Formaldehyde • Testing for Permissible Exposure Limits (PEL) and Short-Term Exposure Limits (STEL) • Labeling and Material Safety Data Sheets • Hoods and Other Ventilating Systems
1230 - 1245	Break
1245 – 1400	The OSHA Formaldehyde Standard (cont'd) Using Personal Protective Equipment • Spill Cleanup and Decontamination Procedures • First Aid for Formaldehyde-Related Accidents • Medical Surveillance Plans
1400 - 1420	VIDEO: the OSHA Formaldehyde Standard
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2: Tuesday, 19th of November 2024

Tuesday, 19" of November 2024	
Planning for Laboratory Emergencies	
The Emergency Plan • Types of Emergencies • Alarms and Warning Systems •	
Contacting Outside Agencies • Evacuation • Fires, Explosions and Chemical	
Spills	
VIDEO: Planning for Laboratory Emergencies	
Break	
Preventing Contamination	
How Contamination Occurs • General Preventative Measures • Engineering	
Controls • Safe Work Practices • Personal Protective Equipment	
VIDEO: Preventing Contamination	
Material Safety Data Sheets	
The Purpose of Material Safety Data Sheets (MSDS's) • Sections of the MSDS •	
Information Found in each Section • How MSDS information can Help	
Employees Work Safely	





















1200 - 1230	VIDEO: Material Safety Data Sheets	
1230 - 1245	Break	
1245 – 1400	Laboratory Ergonomics The Parts of the Body Most Susceptible to Ergonomics Problems • Arranging Work Areas to Minimize Muscle Stress and Strain • Working from "Neutral" Positions • The Most and Least Stressful Types of Body Movements • Proper Lifting Techniques • Effective Stretching Exercises	
1400 - 1420	VIDEO: Laboratory Ergonomics	
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow	
1430	Lunch & End of Day Two	

Day 3: Wednesday, 20th of November 2024

Day 3:	Wednesday, 20" of November 2024		
0730 – 0900	Handling Compressed Gas Cylinders The Four Ways to Compress Gases • Hazards of Compressed Gases • Proper		
	Storage Procedures • Markings and Labels • Handling Cylinders Safely •		
	Connections and Fittings • Leak Detection		
0900 - 0930	VIDEO: Handling Compressed Gas Cylinders		
0930 - 0945	Break		
	Flammables & Explosives		
	Definitions of Flammables and Explosives (Including Flashpoint, Limits of		
0045 1100	Flammability, Ignition Temperature, etc) • Conditions that can Create		
0945 – 1100	Flammable/Explosive Hazards • The Role of Ventilation in Preventing		
	Flammable/Explosive Hazards • Transporting Flammables and Explosives •		
	Storing Flammables and Explosives		
	Flammables & Explosives (cont'd)		
	Using Compressed Gases • Information Sources (Such as Labeling and Material		
1100 – 1200	Safety Data Sheets) Regarding Flammable/Explosive Hazards • Protections that		
	can be Used When Working with Flammables/Explosives • Emergency Planning		
	Disposing of Flammables/Explosives		
1200 – 1230	VIDEO: Flammables & Explosives		
1230 - 1245	Break		
	Safe Handling of Laboratory Glassware		
	Inspecting Glassware Before Use • "Compatibility" Factors • Effects of Extreme		
1245 - 1400	Temperatures and Pressures • Matching Glassware to the Situation • Using		
	Personal Protective Equipment • Storage and Handling • Washing and		
	Cleanup • Working with Glass Tubing • Assembling Apparatus		
1400 - 1420	VIDEO: Safe Handling of Laboratory Glassware		
1420 – 1430	Recap		
	Using this Course Overview, the Instructor(s) will Brief Participants about the		
	Topics that were Discussed Today and Advise Them of the Topics to be Discussed		
	Tomorrow		
1430	Lunch & End of Day Three		



















Day 4:	Thursday	21st of November 2024
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	Laboratory Hoods		
0730 – 0900	Why Laboratory Hoods are Needed • Protections Afforded by Hoods • How		
	Hoods Function Mechanically • Proper Use of Laboratory Hoods		
0900 - 0930	VIDEO: Laboratory Hoods		
0930 - 0945	Break		
	Safety Showers & Eye Washes		
	How Safety Showers and Eye Washes Operate • Precautions to Take When		
0945 – 1030	Working with Hazardous Materials • Exposure to Corrosive Substances •		
	Locating Safety Shower and Eye Wash Equipment • Testing the Equipment •		
	Using the Equipment		
1030 - 1100	VIDEO: Safety Showers & Eye Washes		
	Electrical Safety in the Laboratory		
1100 - 1230	How Electricity Works • Common Electrical Hazards • Fuses, Circuit Breakers		
	and Grounding		
1230 - 1245	Break		
1245 - 1330	Electrical Safety in the Laboratory (cont'd)		
	Using and Maintaining Equipment • Accidents and Emergency Procedures		
1330 - 1345	VIDEO: Electrical Safety in the Laboratory		
1345 – 1400	Course Conclusion		
1400 – 1415	POST-TEST		
1415 - 1430	Presentation of Course Certificates		
1430	Lunch & End of Course		
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Practical Sessions/Site Visit

Site visit will be organized during the course for delegates to practice the theory learnt:-



Course Coordinator

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