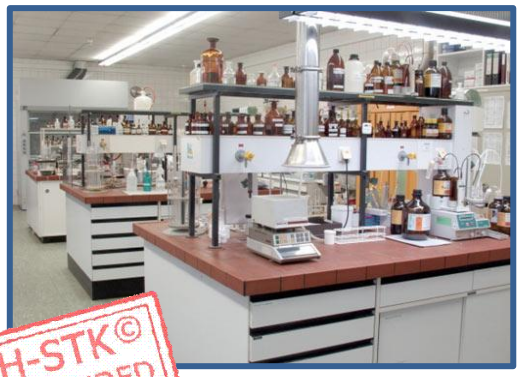
COURSE OVERVIEW LE0430-4D
Modern Laboratory Safety & Health

Course Title
Modern Laboratory Safety & Health



Course Date/Venue
Session 1: August 12-15, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: November 18-21, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, 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.

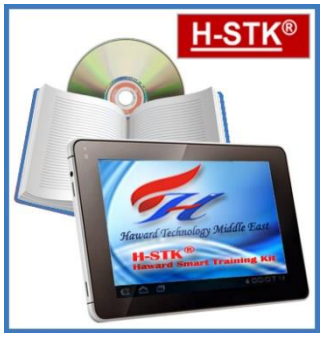
Function, proper use and importance of laboratory hoods, operations of safety showers and eye washes and electrical safety in the laboratory will also be discussed during the course.

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. His 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

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

0730 – 0900	***Planning for Laboratory Emergencies*** *The Emergency Plan • Types of Emergencies • Alarms and Warning Systems • Contacting Outside Agencies • Evacuation • Fires, Explosions and Chemical Spills*
0900 – 0930	***VIDEO: Planning for Laboratory Emergencies***
0930 – 0945	*Break*
0945 – 1030	***Preventing Contamination*** *How Contamination Occurs • General Preventative Measures • Engineering Controls • Safe Work Practices • Personal Protective Equipment*
1030 – 1100	***VIDEO: Preventing Contamination***
1100 – 1200	***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

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*
0945 – 1100	***Flammables & Explosives*** *Definitions of Flammables and Explosives (Including Flashpoint, Limits of Flammability, Ignition Temperature, etc) • Conditions that can Create Flammable/Explosive Hazards • The Role of Ventilation in Preventing Flammable/Explosive Hazards • Transporting Flammables and Explosives • Storing Flammables and Explosives*
1100 – 1200	***Flammables & Explosives (cont'd)*** *Using Compressed Gases • Information Sources (Such as Labeling and Material 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*
1245 – 1400	***Safe Handling of Laboratory Glassware*** *Inspecting Glassware Before Use • "Compatibility" Factors • Effects of Extreme 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

0730 – 0900	***Laboratory Hoods*** *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*
0945 – 1030	***Safety Showers & Eye Washes*** *How Safety Showers and Eye Washes Operate • Precautions to Take When 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***
1100 – 1230	***Electrical Safety in the Laboratory*** *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*

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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