COURSE OVERVIEW LE0048
Certified Laboratory Safety Officers

Course Title
Certified Laboratory Safety Officers

Course Date/Venue
April 13-17, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
LE0048

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

Hazardous materials and chemicals are ubiquitous as air, carbohydrates, enzymes, lipids, minerals, proteins, vitamins, water and wood. Naturally occurring hazardous materials and chemicals are supplemented by man-made substances. There are about 70,000 chemicals in use with another 500-1000 added each year. Their properties have been harnessed to enhance the quality of life, thus chemicals are found in virtually all workplaces. Besides the benefits, chemicals also pose dangers to man and the environment.

Society must strike a balance between the benefits and risks of hazardous materials and chemicals. In the workplace it is a management responsibility to ensure practices control the dangers, and it is for employees to collaborate in implementing the agreed procedures. Management must also prevent uncontrolled environmental releases and ensure all wastes are disposed of safely and with proper regard for their environmental impact. The aims of this course are to raise awareness and to help participants identify, assess and control the hazards of chemicals and other hazardous materials to permit optimum exploitation whilst minimizing the dangers.

In this course, you will learn the best practices to minimize personal injury, health impairment, property loss, fines, and liability in your laboratory. This course gives you an overview of the practical and latest regulatory measures for the prevention of accidents, incidents, or exposures that may cause health impairment, injury, fire, or interference with laboratory operations.

In addition to the updated knowledge provided to course participants during the course period, each participant will go back to his/her laboratory equipped with an outstanding manual and 12 video tapes, compressed in one CD that can be used by the participant in training colleagues and subordinate on laboratory safety.

Course Objectives

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

- Get certified as a "*Certified Laboratory Safety Officers*"
- Apply proper safety and health techniques for modern laboratory and explain the recent OSHA regulations applying to the laboratory environment
- Explain the OSHA formaldehyde standards applicable to analytical laboratories and how to work safely with formaldehyde
- Identify the requirements, guidelines and 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 and 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 shall 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 and explosives and demonstrate how to transport and store flammables and explosives
- Employ safe handling of laboratory glassware and emphasize how to use and maintain laboratory glassware safely
- Describe the function, proper use and importance of laboratory hoods and explain the operations of safety showers and eye washes and when and how they shall be used
- Discuss electrical safety in the laboratory, 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 provides an overview of all significant aspects and considerations of laboratory safety for those who are dealing with hazardous materials and chemicals in the workplace such as managers, engineers, chemists and other technical staff. This course is also suitable for health, safety and environmental (HSE) personnel.

Course Certificate(s)

(1) Internationally recognized Wall Competency Certificates and Plastic Wallet Card Certificates will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-

(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East

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Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-19

HTME No. 8667-2014-9020-2555

Participant Name: Abdulsatar Al Otaibi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
LE0048-2D	Certified Laboratory Safety Officers	November 13-14, 2019	12	1.2

Total No. of CEU's Earned as of TOR Issuance Date **1.2**

TRUE COPY

Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by

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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 **3.0 CEUs** (Continuing Education Units) or **30 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. **Nikolas Karnavos**, MSc, BSc, is a **Senior Analytical Chemist** with over **35 years** of extensive experience within the **Oil**, **Gas**, **Refinery** and **Petrochemical** industries. His expertise widely covers **Gas & Liquid Chromatograph Process Analysers**, **Process Analyzer Techniques** (**Online** & **Offline**), Laboratory Information Management System (**LIMS**), **Data & Method Validation in Analytical Laboratories**, Laboratory **Automation Techniques**, **Practical Problem Solving in Chemical Analysis**, **Practical Statistical Analysis of Lab Data**, **Chemical Laboratory**, **Analytical Laboratory & Instrumentation**, Laboratory **Health & Safety**, **GLP**, Laboratory **Quality Management** (**ISO 17025**), **ISO 9001** and Medical Laboratory Quality Management (**ISO 15189**). Further, he is also well-versed in Environmental **Online Analyzers** (**Air** & **Water**), **Gas Chromatography** and various instrumental methods of analysis such as **Water Analysis & Quality Control**, **Water and Wastewater Chemical** Analysis, **Statistical Data and Laboratory Analysis**, **Gas** Analysis, **Qualitative Fuel** Analysis, **Environmental Chemical** Analysis, **Laboratory Environmental** Analysis including Water Quality Testing, Process Water and **Wastewater Effluents**, Oily **Sludge Treatment**, Atomic Absorption and Spectroscopic Methods in Analytical Chemistry, **Analytical Method Development** and **Methods of Environmental Measurements** (**Water**, **Air**, **Liquid** & **Solid Wastes**).

Mr. Karnavos was the **Laboratory Manager** of **Exxon** wherein he was responsible for **ISO 17025 certification**, upgrading laboratory equipment in **refinery**, **petrochemical** and **polypropylene** plants, upgrading and extending LIMS, handling the transition plan process of the existing laboratory to a new as well as formulating and executing the plans for applied research and technology transfer. During his career life, he had occupied several significant positions as the **Laboratory Analyst**, **Laboratory Professor**, **Quality Manager**, **Partner & Managing Director**, **Environmental Engineer**, **Process Engineer**, **Environmental Management Corporate Department Head** and **Quality Control & Plastics Application Head** with different international companies like the **AQUACHEM**, **Hellenic Petroleum** (**EXXON**) and **Technological Institute**.

Mr. Karnavos holds a **Master** degree in **Chemical Engineering** and **Bachelor** degrees in **Mechanical Engineering** and **Petroleum Engineering** from the **Aristotelian University of Thessaloniki**, **Technological Institute** and **KATEE Kavala** respectively. He is an **Accredited Trainer** for the Organization for the Certifications & Vocational Guidance (**EOPPEP**), a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified Instructor/Trainer** and an **Accredited Environmental Auditor** from the **IEMA**. Further, he is the **President** of Greek **Association of Chemical Engineers** and an active member of various professional engineering bodies internationally like the **IEMA**, **Technical Chamber** of Greece and the **CONCAWE**. He also **published numerous books** and **scientific papers** and delivered various trainings and workshops worldwide.

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: ***Sunday, 13th of April 2025***

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*
1100 – 1230	***Orientation to Laboratory Safety (cont'd)*** *Chemical Storage • Handling Compressed Gases • Labeling • Waste Disposal • Accidents and Emergencies • Safety Showers and Eye Washes*
1230 – 1245	*Break*
1245 – 1420	***Toxic Chemicals- Flammable Chemicals*** *Hazard Recognition • Types of Toxic Chemicals • Hazard Assessment • Risk Assessment of Carcinogens • Risk Control • Control of Substances Hazardous to Health • Specific Precautions • Ignition & Propagation of a Fame Front • Control Measures • Fire Extinguishment • Fire Precautions*
1420 - 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 14th of April 2025***

0730 – 0930	***Reactive Chemicals*** *Water-Sensitive Chemicals • Toxic Hazards From Mixtures • Reactive Hazards from Mixtures • Oxidizing Agents • Explosive Chemicals • General Principles for Storage • Hazards Arising in Chemicals Processing*
0930 – 0945	*Break*
0945 – 1100	***Compressed Gases- Cryogens*** *Acetylene • Air • Ammonia • Carbon Dioxide • Carbon Monoxide • Chlorine • Hydrogen • Hydrogen Chloride • Hydrogen Sulphide • Liquefied Petroleum Gases*
1100 – 1230	***Compressed Gases- Cryogens (cont'd)*** *Methane • Nitrogen • Nitrogen Oxides • Oxygen • Ozone • Sulphur Dioxide • Liquid Oxygen • Liquid Nitrogen and Argon • Liquid Carbon Dioxide • Liquefied Natural Gas*
1230 – 1245	*Break*
1245 – 1420	***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*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 15th of April 2025

0730 – 0930	***Planning for Laboratory Emergencies*** *The Emergency Plan • Types of Emergencies • Alarms and Warning Systems • Contacting Outside Agencies • Evacuation • Fires, Explosions and Chemical Spills*
0930 – 0945	*Break*
0945 – 1100	***Safety by Design*** *Design Procedures • Layout • Storage • Equipment Design • Piping Arrangements • Fire Protection • Installation & Operation*
1100 – 1230	***Operating Procedures*** *Commissioning • Operation • Maintenance • Pressure Systems • Emergency Procedures • Spillage • First Aid • Personal Protection • Medical Screening • Monitoring Standards • Training*
1230 – 1245	*Break*
1245 – 1420	***Preventing Contamination*** *How Contamination Occurs • General Preventative Measures • Engineering Controls • Safe Work Practices • Personal Protective Equipment*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 16th of April 2025

0730 – 0930	***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*
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*
1100 – 1230	***Flammables & Explosives (cont'd)*** *Transporting Flammables and Explosives • Storing Flammables and Explosives • Using Compressed Gases*
1230 – 1245	*Break*
1245 – 1420	***Flammables & Explosives (cont'd)*** *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*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 17th of April 2025

0730 – 0830	***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*
0930 – 0945	*Break*

0945 – 1045	***Laboratory Hoods*** *Why Laboratory Hoods are Needed • Protections Afforded by Hoods • Why Laboratory Hoods are Needed • Protections Afforded by Hoods •How Hoods Function Mechanically • Proper Use of Laboratory Hoods*
1045 – 1230	***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*
1230 – 1245	*Break*
1245 – 1315	***Electrical Safety in the Laboratory*** *How Electricity Works • Common Electrical Hazards • Fuses, Circuit Breakers and Grounding • Using and Maintaining Equipment • Accidents and Emergency Procedures*
1315 - 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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