

**COURSE OVERVIEW HE0110**  
**Certified HAZOP Member**

**Course Title**

Certified HAZOP Member

**Course Reference**

HE0110

**Course Duration/Credits**

Five days/3.0 CEUs/30 PDHs



**Course Date/Venue**

Session(s)	Date	Venue
1	August 04-08, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
2	September 01-05, 2024	Boardroom, Warwick Hotel Doha, Doha, Qatar
3	October 27-31, 2024	Boardroom, Warwick Hotel Doha, Doha, Qatar
4	December 08-12, 2024	Club B Meeting Room, Ramada Plaza by Wyndham Istanbul City Center, Istanbul, Turkey

**Course Description**



***This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using one of our state-of-the-art simulators.***



Hazardous chemicals are ubiquitous as air, carbohydrates, enzymes, lipids, minerals, proteins, vitamins, water and wood. Naturally occurring hazardous 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 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 to permit optimum exploitation whilst minimizing the dangers.

The hazards of chemicals stem from their inherent flammable, explosive, toxic, carcinogenic, corrosive, radioactive or chemical-reactive properties. The effect of exposure on personnel may be acute (fatal) or prolonged that result in an occupational disease or systemic poisoning. However, whether a hazardous condition develops in any particular situation also depends upon the physical properties of the chemical (or mixture of chemicals), the scale involved, the circumstances of handling or use, e.g. provision of control and safety devices, local exhaust ventilation, general ventilation, personal protection, atmospheric monitoring and systems of work generally.

This course is designed to cover occupational, industrial and environmental hazards associated with hazardous materials and chemicals. It includes chemical spills, fires and explosions since they inevitably involve chemical compounds. Further, the course will present information on the nature of hazardous materials and chemicals and help participants reduce or eliminate potential exposure to hazardous materials and chemicals in their work environment.

### **Course Objectives**

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

- Apply systematic techniques in hazardous material handling (HAZMAT) and hazardous material communication (HAZCOM) including handling, storage, disposal, monitoring, response, SDS and spill clean up of hazardous materials and chemicals
- Discuss the physicochemistry of vapour pressure, gas-liquid solubility, density differences of liquids, surface area effects in mass transfer or heterogeneous reactions and chemical reaction kinetics
- Recognize the hazards of toxic chemicals including its types, risk control and specific precautions
- Employ control measures for flammable chemicals and prevent hazards arising in reactive chemicals processing
- Enumerate the various cryogenics, compressed gases and radioactive chemicals including its characteristics
- Carryout proper monitoring techniques for environmental pollution, gases, vapours, particulates, water quality, sampling strategies and incident investigation
- Discuss safety by design including design procedures, layout, storage, piping arrangements, fire protection, installation and operation of hazardous chemicals
- Apply effective operating procedures for the commissioning, operation, maintenance, spillage, personal protection and monitoring standards of hazardous chemicals
- Identify the classification, packaging, labelling and specific information for marketing hazardous chemicals
- Employ the safe transport of chemicals by road, rail, air and sea and determine the modes of transport for liquids, gases and solids
- Acquire knowledge on the monitoring and protection of chemicals and the environment including the legislative control governing these chemicals, proper waste management and environmental impact assessment

**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 hazardous materials and chemicals handling, storage, SDS, disposal, monitoring, response and spill clean-up for those who are dealing with hazardous materials and chemicals in the workplace such as managers, engineers and other technical staff. This course is also suitable for health, safety and environmental (HSE) personnel.

**Training Methodology**

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

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

**Course Fee**

Dubai	<b>US\$ 5,500</b> per Delegate + <b>VAT</b> . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	<b>US\$ 6,000</b> per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	<b>US\$ 6,000</b> per Delegate + <b>VAT</b> . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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 Certificate(s)**

- (1) Internationally recognized Competency Certificates and Plastic Wallet Cards 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.

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CEUs



**Haward Technology Middle East**  
Continuing Professional Development (HTME-CPD)

## CEU Official Transcript of Records

**TOR Issuance Date:** 20-Sep-18  
**HTME No.** PAR10127  
**Participant Name:** Abdulfatah Al Taleb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE0110	<b>HAZMAT &amp; HAZCOM: Hazardous Materials &amp; Chemicals Handling, Storage, SDS, Disposal, Monitoring, Response &amp; Spill Clean Up</b>	September 16-20, 2018	30	3.0
<b>Total No. of CEU's Earned as of TOR Issuance Date</b>				<b>3.0</b>

**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), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, 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



P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | Fax: +971 2 3091 716 | E-mail: info@haward.org | Website: www.haward.org

**Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations: -


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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.

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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 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. Francis Almeida**, PgDip, BSc, NEBOSH-ENV, NEBOSH-IGC, NEBOSH-IFC, NEBOSH-IOGC, NEBOSH-PSM, is a **Senior Health, Safety & Environmental (HSE) Consultant** with over **30 years** of practical experience within the **Oil and Gas** industry. He is a **NEBOSH Approved Instructor** for various certification programs. His expertise lies extensively in the areas of **Accident/Incident Investigation & Risk Management**, **NEBOSH Environmental Management**, **NEBOSH International General Certificate**, **NEBOSH Fire Safety & Risk Management International Certificate**, **NEBOSH International Oil & Gas Certificate**, **NEBOSH Process Safety Management**, **HAZOP & HAZID**, **HAZMAT & HAZCOM Storage & Disposal**, **As Low as Reasonably Practicable (ALARP)**, **Process Hazard Analysis (PHA)**, **Process Safety Management (PSM)**, **Hazardous Materials & Chemicals Handling**, **Pollution Control**, **Environment, Health & Safety Management**, **Process Risk Analysis**, **Effective Tool Box Talks**, **Construction Sites Safety**, **HSSE Management System**, **HSSE Audit & Inspection**, **HSEQ Procedures**, **Authorized Gas Testing**, **Confined Space Entry & Rescue**, **Risk Management**, **Quantitative & Qualitative Risk Assessment**, **Working at Height**, **Firefighting Techniques**, **Fire & Gas Detection System**, **Fire Fighter & Fire Rescue**, **Fire Risk Assessment**, **HSE Industrial Practices**, **Manual Handling**, **Rigging Safety Rules**, **Machinery & Hydraulic Lifting Equipment**, **Warehouse Incidents & Accidents Reporting**, **Incident & Accident Investigation**, **Emergency Planning**, **Emergency Response & Crisis Management Operations**, **Waste Management Monitoring**, **Root Cause Analysis**, **Hazard & Risk Assessment**, **Task Risk Assessment (TRA)**, **Incident Command**, **Job Safety Analysis (JSA)**, **Behavioral Based Safety (BBS)**, **Fall Protection**, **Work Permit & First Aid** and various international codes and standards such as the ISO 9001, OHSAS 18001, ISO 14001, SA8000, ISO 9001-2000 and ISO 9002. He was the **Offshore Safety Specialist** of **Chevron** wherein he was in-charge in HSE inspections, hazard analysis, incident investigation and implementing corrective actions.

During his career life, Mr. Almeida has gained his practical and field experience through his various significant positions and dedication as the **Quality Manager**, **HSE Specialist/Acting On-Scene Commander**, **Quality Auditor**, **Quality Supervisor**, **QHSE Engineer**, **Metallurgical Engineer**, **HSE Coordinator**, **Suppliers Auditor**, **Senior Instructor/Consultant**, **Oil & Gas Construction Specialist**, **Business Administration Specialist** and **Oil & Gas Management Technology Specialist** for various international companies and institutions such as the **IBEC**, **Lopes & Almeida**, **IMA**, **EXPRO Group**, **UNESA**, **Vetco Aibel**, **ABB Oil & Gas**, **Brazilian Aluminum Foundry**, **DNV** and **ABIFA**.

Mr. Almeida has a **Bachelor's degree in Metallurgical Engineering** and a **Post Graduate Diplomas in Safety Engineering** and **Industrial Administration**. Further, he is a **Certified Instructor/Trainer**, an **Approved Lead Tutor in NEBOSH Environmental Management Certificate**, **NEBOSH International General Certificate**, **NEBOSH International Oil & Gas Certificate** and **NEBOSH Process Safety Management Certificate** and an **Approved Practical Assessor/Lead Tutor in NEBOSH Fire Safety & Risk Management**. Moreover, he is a **Certified ISO 9001:2000 Lead Auditor**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership and Management (ILM)** and has further delivered numerous trainings, courses, seminars, conferences and workshops globally.



### 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	<b>PRE-TEST</b>
0830 - 0900	<b>General Principles of Chemistry</b> Atoms & Molecules • Periodic Table • Valency • Chemical Bonds • Oxidation/Reduction • Physical State • Acids • Bases • Halogens
0900 - 0915	Break
0915 - 1030	<b>General Principles of Chemistry (cont'd)</b> Metals • Oxygen & Sulphur • Nitrogen, Phosphorus, Arsenic & Antimony • PH • Salts • Organic Chemistry • Combustion Chemistry • Chemical Reactivity
1030 - 1200	<b>Physicochemistry</b> Vapour Pressure • Gas-Liquid Solubility • Liquid-To-Vapour Phase Change • Solid-to-Liquid Phase Change • Density Differences of Gases & Vapours • Density Differences of Liquids • Immiscible Liquid-Liquid Systems • Vapour Flashing
1200 - 1215	Break
1215 - 1420	<b>Physicochemistry (cont'd)</b> Effects of Particle or Droplet Size • Surface Area Effects in Mass Transfer or Heterogeneous Reactions • Enthalpy Changes on Mixing of Liquids • Critical Temperatures of Gases • Chemical Reaction Kinetics • Corrosion • Force & Pressure • Expansion & Contraction of Solids
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day One

#### Day 2:

0730 - 0900	<b>Toxic Chemicals</b> Hazard Recognition • Types of Toxic Chemicals • Hazard Assessment • Risk Assessment of Carcinogens • Risk Control • Control of Substances Hazardous to Health • Specific Precautions • SDS
0900 - 0915	Break
0915 - 1030	<b>Flammable Chemicals</b> Ignition & Propagation of a Flame Front • Control Measures • Fire Extinguishment • Fire Precautions • SDS
1030 - 1200	<b>Reactive Chemicals</b> Water-Sensitive Chemicals • Toxic Hazards From Mixtures • Reactive Hazards from Mixtures • Oxidizing Agents • Explosive Chemicals • General Principles for Storage • Hazards Arising in Chemicals Processing • SDS
1200 - 1215	Break
1215 - 1420	<b>Cryogenics</b> Liquid Oxygen • Liquid Nitrogen and Argon • Liquid Carbon Dioxide • Liquefied Natural Gas • SDS
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Two





**Day 3**

0730 – 0900	<b>Compressed Gases</b> Acetylene • Air • Ammonia • Carbon Dioxide • Carbon Monoxide • Chlorine • Hydrogen • Hydrogen Chloride • Hydrogen Sulphide • Liquefied Petroleum Gases • Methane • Nitrogen • Nitrogen Oxides • Oxygen • Ozone • Sulphur Dioxide
0900 – 0915	Break
0915 – 1030	<b>Monitoring Techniques</b> Selected General Analytical Techniques for Monitoring Environmental Pollution • Gases & Vapours • Particulates • Monitoring Water Quality • Monitoring Land Pollution • Monitoring Air Pollution
1030 – 1200	<b>Monitoring Techniques (cont'd)</b> Flammable Gases • Toxic Particulates • Official Methods • Sampling Strategies • Selected Strategies for Determining Employees' Exposure to Airborne Chemicals • Pollution Monitoring Strategies in Incident Investigation
1200 – 1215	Break
1215 – 1420	<b>Radioactive Chemicals</b> Hazards • Types of Radiation • Control Measures • SDS
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Three

**Day 4**

0730 – 0900	<b>Safety by Design</b> Design Procedures • Layout • Storage • Equipment Design • Piping Arrangements • Fire Protection • Installation & Operation
0900 – 0915	Break
0915 – 1030	<b>Operating Procedures</b> Commissioning • Operation • Maintenance • Pressure Systems • Emergency Procedures • Spillage • SDS
1030 – 1200	<b>Operating Procedures (cont'd)</b> First Aid • Personal Protection • Medical Screening • Monitoring Standards • Training
1200 – 1215	Break
1215 – 1420	<b>Marketing</b> Classification • Packaging • Labelling • Information • SDS
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5**

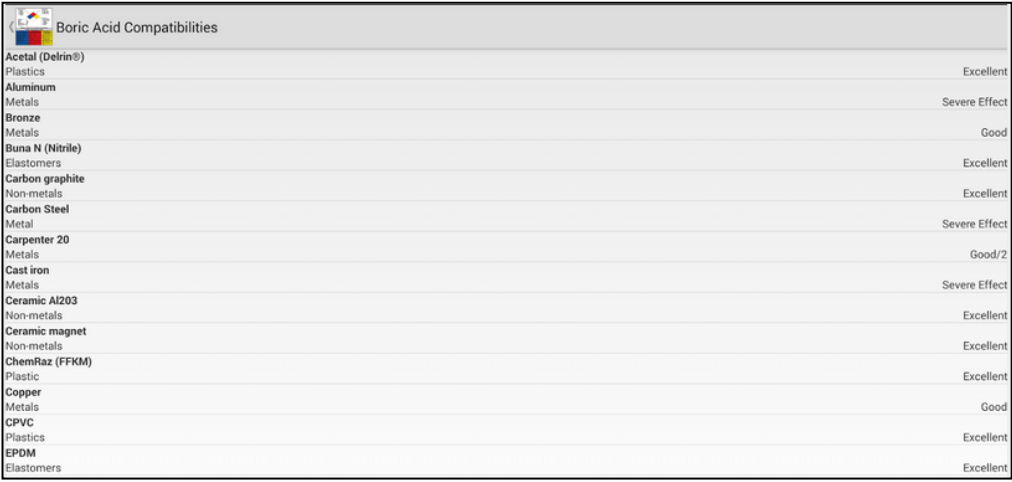
0730 – 0900	<b>Transport of Chemicals</b> Road Transport • Rail Transport • Air Transport • Sea Transport • Modes of Transport for Liquids, Gases & Solids • Loading & Unloading • Container Filling/Discharging • SDS
0900 – 0915	Break
0915 – 1030	<b>Chemicals &amp; the Environment: Monitoring &amp; Protection</b> Legislative Control • Waste Management • Environmental Impact Assessment • Control of Atmospheric Emissions • SDS • Liquid Effluent Treatment Operations • Control of Solid Waste • Monitoring & Auditing
1030 – 1200	<b>Chemical Spill Clean Up</b>
1200 – 1215	Break



1215 – 1300	<i>Chemical Spill Clean Up (cont'd)</i>
1300 – 1315	<i>Course Conclusion</i>
1315 – 1415	<b>COMPETENCY EXAM</b>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch &amp; End of Course</i>


**Simulators (Hands-on Practical Sessions)**

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using one of our state-of-the-art simulators; “Chemical Compatibility 1.1 Simulator”, “Chemical Safety Database Simulator”, “CAMEO Chemicals Suite Simulator” or “ERG 2020 Simulator”.



Material	Compatibility
Acetal (Delrin®)	Excellent
Plastics	Excellent
Aluminum	Severe Effect
Metals	Severe Effect
Bronze	Good
Metals	Good
Buna N (Nitrile)	Excellent
Elastomers	Excellent
Carbon graphite	Excellent
Non-metals	Excellent
Carbon Steel	Severe Effect
Metal	Severe Effect
Carpenter 20	Good/2
Metals	Good/2
Cast Iron	Severe Effect
Metals	Severe Effect
Ceramic Al2O3	Excellent
Non-metals	Excellent
Ceramic magnet	Excellent
Non-metals	Excellent
ChemRaz (FFKM)	Excellent
Plastic	Excellent
Copper	Good
Metals	Good
CPVC	Excellent
Plastics	Excellent
EPDM	Excellent
Elastomers	Excellent

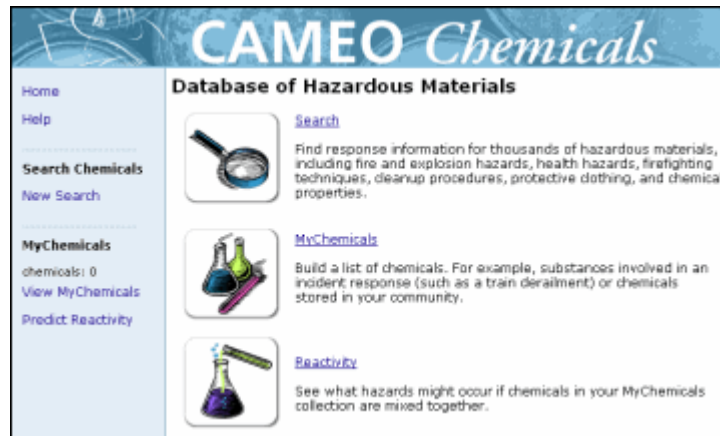
**Chemical Compatibility 1.1 Simulator**



LAC

- EXPLOSIVE (爆炸性)
- OXIDIZING (助燃)
- FLAMMABLE (易燃)
- TOXIC (有毒)
- HARMFUL (有害)
- CORROSIVE (腐蚀性)
- IRRITANT (刺激性)

**Chemical Safety Database Simulator**



**CAMEO Chemicals Suite Simulator**



**ERG 2020 Simulator**

**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)