COURSE OVERVIEW HE0110
HAZMAT & HAZCOM
Hazardous Materials & Chemicals
Handling, Storage, SDS, Disposal, Monitoring, Response & Spill Clean Up

Course Title
HAZMAT & HAZCOM: Hazardous Materials & Chemicals *Handling, Storage, SDS, Disposal, Monitoring, Response & Spill Clean Up*

Course Reference
HE0110

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

Course Date/Venue

Session(s)	Date	Venue
1	June 28-July 02, 2026	Meeting Plus 6, Downtown Rotana, Manama, Kingdom of Bahrain
2	July 12-16, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
3	October 25-29, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
4	December 13-17, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE

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 cryogens, compresses 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 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.

Accommodation

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

Course Fee

Manama	**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.
Doha	**US$ 6,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	**US$ 6,000** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	**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.

Course Certificate(s)

(1) Internationally recognized Competency 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:-

Haward Technology Middle East

Certifies that

Abdulfatah Al Taleb

Has successfully completed a course on

HAZMAT & HAZCOM: Hazardous Materials & Chemicals Handling, Storage, SDS, Disposal, Monitoring, Response & Spill Clean Up

and is hereby awarded 3.0 CEUs (Continuing Education Units) equivalent to 30 PDHs (Professional Development Hours)

Dubai, Sep 18-20, 2018	CC7400/01/HE0110/DXB/20.09.18
Course Location & Date	Certificate Number
Sep 20, 2018	Sep 20, 2021
Certificate Issuance Date	Certificate Expiry Date

Mr. Peter Christian
Course Instructor

ACTVET License No.
0588/2013

Ms. Maricel De Guzman
Academic Director

Certificate Accreditation
Please see overleaf

(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.

Page 1 of 1

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	**HAZMAT & HAZCOM: Hazardous Materials & Chemicals** *Handling, Storage, SDS, Disposal, Monitoring, Response & Spill Clean Up*	September 16-20, 2018	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

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

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

- 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.

Course Instructor

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. Andrew Ladwig is a **Senior Process & Safety Engineer** with over **25 years** of extensive experience within the **Oil & Gas**, **Refinery**, **Petrochemical & Power** industries. His expertise widely covers in the areas of **PHA**, **HAZOP**, **HAZCOM**, **HAZMAT**, **HAZID**, **Behavior Based Safety**, **Hazardous Materials & Chemicals** Handling, **Pollution Control**, **Environment, Health & Safety** Management, **Process Risk** Analysis, **Hazard & Risk Assessment**, **Emergency Response Procedures** Behavioural Based Safety (**BBS**), **Confined Space Entry**, **Fall Protection**, **Emergency Response**, H_2S, Safety Management System (**ISO 45001**), **Accident/Incident Investigation** System and Report PSM, **Risk Assessment**, **SCE FMEA Failure Investigations**, Site Management Safety Training (**SMSTS**), **Occupational Health & Safety and Industrial Hygiene, Crisis Management & Damage Control** in Oil & Gas Industry, **Enhancing HSSE Safety Performance & Effectiveness**, **Overhead & Gantry Crane Safety**, **HSSE Principles & Practices Advanced**, **HAZOP** Study, Sampling & Analysis, **Training** Analysis, **Job Analysis** Techniques, Storage & Handling of **Toxic Chemicals & Hazardous Materials**, **Hazardous Material** Classification & Storage/Disposal, **Dangerous Goods**, Environmental Management System (**EMS**). Further, he is also well-versed in **Ammonia Manufacturing & Process Troubleshooting**, **Ammonia Storage & Loading** Systems, **Ammonia Plant** Operation, Troubleshooting & Optimization, **Ammonia Recovery**, **Ammonia Plant Safety**, Hazard of **Ammonia Handling**, Storage & Shipping, **Operational Excellence** in **Ammonia Plants**, **Fertilizer Storage** Management (Ammonia & Urea), **Fertilizer Manufacturing** Process Technology, **Sulphur Recovery**, Phenol Recovery & Extraction, **Wax Sweating & Blending**, **Petrochemical & Fertilizer** Plants, **Nitrogen Fertilizer** Production, **Petroleum Industry Process** Engineering, **Separators** in **Oil & Gas** Industry, **Gas Testing & Energy** Isolations, Gas Liquor Separation, **Industrial Liquid Mixing**, **Wax Bleachers**, **Extractors**, **Fractionation**, Operation & Control of **Distillation**, Process of **Crude ATM & Vacuum Distillation** Unit, **Water Purification**, **Steam & Electricity**, **Flame Arrestors** and **Coal Processing**, **Environmental Emission Control**.

During his career life, Mr. Ladwig has gained his practical experience through his various significant positions and dedication as the **Mechanical Engineer**, **Project Engineer**, **Reliability & Maintenance Engineer**, **Maintenance Support Engineer**, **Process Engineer**, **HSE Supervisor**, **Warehouse Manager**, **Quality Manager**, **Business Analyst**, **Senior Process Controller**, **Process Controller**, **Safety Officer**, **Mechanical Technician**, **Senior Lecturer** and **Senior Consultant/Trainer** for various companies such as the Sasol Ltd., Sasol Wax, Sasol Synfuels, just to name a few.

Mr. Ladwig has a **Bachelor's** degree in **Chemical Engineering** and a **Diploma** in **Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and has delivered various trainings, workshops, seminars, courses and conferences internationally.

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 – 0900	***General Principles of Chemistry*** *Atoms & Molecules ● Periodic Table ● Valency ● Chemical Bonds ● Oxidation/Reduction ● Physical State ● Acids ● Bases ● Halogens*
0900 – 0915	*Break*
0915 – 1030	***General Principles of Chemistry (cont'd)*** *Metals ● Oxygen & Sulphur ● Nitrogen, Phosphorus, Arsenic & Antimony ● PH ● Salts ● Organic Chemistry ● Combustion Chemistry ● Chemical Reactivity*
1030 – 1200	***Physicochemistry*** *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	***Physicochemistry (cont'd)*** *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	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0900	***Toxic Chemicals*** *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	***Flammable Chemicals*** *Ignition & Propagation of a Fame Front ● Control Measures ● Fire Extinguishment ● Fire Precautions ● SDS*
1030 – 1200	***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 ● SDS*
1200 – 1215	*Break*
1215 – 1420	***Cryogens*** *Liquid Oxygen ● Liquid Nitrogen and Argon ● Liquid Carbon Dioxide ● Liquefied Natural Gas ● SDS*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0900	***Compressed Gases*** *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	***Monitoring Techniques*** *Selected General Analytical Techniques for Monitoring Environmental Pollution ● Gases & Vapours ● Particulates ● Monitoring Water Quality ● Monitoring Land Pollution ● Monitoring Air Pollution*
1030 – 1200	***Monitoring Techniques (cont'd)*** *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	***Radioactive Chemicals*** *Hazards ● Types of Radiation ● Control Measures ● SDS*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

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

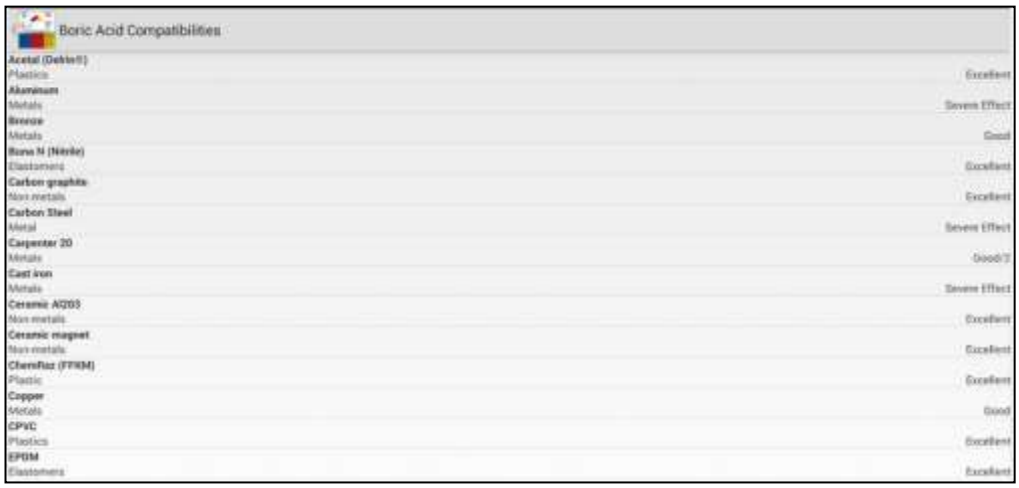
Day 5

0730 – 0900	***Transport of Chemicals*** *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	***Chemicals & the Environment: Monitoring & Protection*** *Legislative Control ● Waste Management ● Environmental Impact Assessment ● Control of Atmospheric Emissions ● SDS ● Liquid Effluent Treatment Operations ● Control of Solid Waste ● Monitoring & Auditing*
1030 – 1200	***Chemical Spill Clean Up***

1200 – 1215	*Break*
1215 – 1300	***Chemical Spill Clean Up (cont'd)***
1300 – 1315	***Course Conclusion***
1315 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

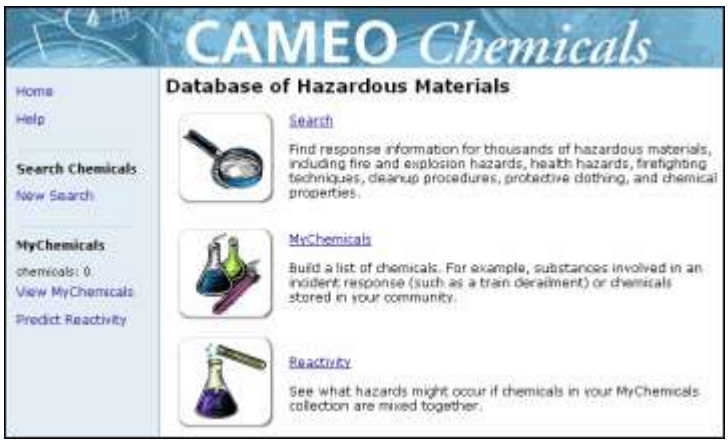
Simulators (Hands-on Practical Sessions)

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".



Chemical Compatibility 1.1 Simulator

Chemical Safety Database Simulator



CAMEO Chemicals Suite Simulator

ERG 2020 Simulator

Course Coordinator

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