COURSE OVERVIEW HE0115

Emergency Spill Response of Hazardous Chemicals (OSHA & NFPA Standards)

Course Title

Emergency Spill Response of Hazardous Chemicals (OSHA & NFPA Standards)

Course Date/Venue

Session 1: May 18-22, 2025/ Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: August 10-14, 2025/ Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA

Course Reference

HE0115

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

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.

Emergency responders are those people who may be the first emergency personnel to arrive at hazardous material/waste incidents and are expected to take some evasive actions to protect the people or the environment. Most emergency responders are limited in their ability to perform aggressive actions due to lack of knowledge or training and lack of resources. Emergency response personnel must understand the Regularity Information & Rules and how to stay within the boundaries delimited by these Rules. These rules include OSHA, 29 CFR, Part 1910.120, *"Hazardous Waste Operation and Emergency Response"* and NFPA 472 *"Standard for Professional Competence of Responders to Hazardous Materials Incidents".*

A chemical spill incident is unlike other types of incidents in which emergency response personnel may be involved. Time is not as critical as at other incidents. Common sense must be applied at all times. Each incident response must be organized to develop a total plan of operation, including options to be exercised in the event of scene deterioration. Monitoring of clean-up contractors requires basic knowledge of procedures and regulatory aspects to ensure that safe and professional clean-up activities are conducted.

Many responses by emergency service organizations have been conducted in a "shooting from the hip" mode. Emergency response personnel are learning by their mistakes, but those mistakes can be very costly.

This course is designed to cover incidents involving the common, everyday hazards that can be encountered in any industry at any time. The chemicals involved in these incidents may not be exotic, but they are equally deadly. The result of exposures to hazardous chemicals (both acute and chronic) will be detailed. The course will develop a clear understanding of the "limitations" of emergency responders at chemical incidents and also how these responders can function to their maximum ability within those limitations.

Further, the course will develop an appreciation among emergency response personnel that scene control cannot be effective with only incomplete facts about the material and conditions involved. To achieve a favourable outcome, emergency response personnel must gather all pertinent information on the situation, evaluate that information using a multi-phase process and implement a plan in an organized safety-oriented program.

Course Objectives

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

- Apply and gain an in-depth knowledge on emergency spill response of hazardous chemicals in accordance with OSHA and NFPA standards
- Identify the various hazardous materials and chemicals including placarding requirements, UN/NA identification system, labelling requirements and marking requirements
- Discuss classifications of hazardous materials which includes explosive and blasting agents, compressed gases, poisons, flammable and combustile liquids, flammable solids and water reactives
- Increase knowledge on hazards of chemical incidents including chemical reactions, associated hazards waste and introduce shipping configurations including packages other than bulk, bulk containers and carriage by aircraft
- Identify the resources available to emergency response personnel including governmental resources, local resources, private resources and technical publications and carryout the respiratory protection which includes the selection of respiratory protection levels, inspection criteria, maintenance criteria, legal requirements, donning and doffing procedures
- Employ the protective clothing including levels of protection and protective material construction and explain the donning and doffing procedures for protective clothing including inspection criteria, donning procedures, doffing procedures and detailed decontamination and be familiar with the initial decision matrix
- Illustrate and present the scene considerations like incident control, control zone procedures, staging area, evacuation and responders and recognize the importance of environmental health considerations including environmental health goals, medical surveillance programs and baseline physical examination
- Conduct and demonstrate medical concerns including victims not contaminated with injuries, victims contaminated with injuries and protection of medical personnel and be familiar with hazard identification which includes general

construction specifications, guidelines for instrument usage, radiological monitoring instruments and combustibility monitoring

- Classify recovery equipment including pumps, vacuum trucks and heavy equipment and apply confined-space entry procedures
- Develop and gain knowledge on incident pre-planning including developing a pre-plan, government requirement, identifying hazards, determining training and equipment needs and achieve proper demonstration of scene mitigation

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 emergency spill response of hazardous chemicals in accordance with the OSHA and NFPA standards for fire/safety engineers, emergency response team members, chemical warehouse supervisors, HSE officers, environmental engineers and other technical staff.

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

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 Certificate(s)
Internationally recognized certificates will be issued to all participants of the course.

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 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. John Taljard is an **International Health**, **Safety & Environment** (**HSE**) **Expert** within **Oil**, **Gas** and **Petrochemical** industries. His expertise includes **Accident/Incident Investigation & Risk Management**, **Risk Assessment** within Production Operation, **Hazard Identification**, **Quantified Risk Assessment**, **Process Hazard Analysis** (**PHA**), **Construction Safety** (**STOP**), **Process Safety Management**, **HAZOP Studies & Leadership**, **FMEA**, Waste Management, Industrial Effluents, **Hazardous Material**, Chemical Handling, **Firefighting**, Emergency Response Services, **HAZCOM**, **HAZWOPER** and **HAZMAT** with over **30 years** of practical experience in the **process** industry. His wide experience also includes **Environmental Management** (**ISO 14001**), **Safety Management** (**OHSAS 18001**), **Quality Management** (**ISO 9001**). He is the **Founder** of **ISTEC**, an international health & safety management and consultancy company where he is greatly involved in the development and implementation of **SHEQ standards & procedures**, **HAZOP Studies**, **HAZOP Leadership**, **FMEA**, **PHA**, operational safety guidelines, inspections & auditing techniques.

While Mr. Taljard has been very active in the process industry for almost three decades, he has likewise headed Consultancy projects for major **petrochemical**, aviation, engineering & construction, mining & chemical industries. In all his projects, he utilizes a systems approach which includes **risk management**, **process safety**, health & environmental management, human behaviour and quality management. Furthermore, he has come to share his expertise through the **numerous international trainings** he has held on **PHA**, **HAZOP**, **Risk Assessment**, Handling **Hazardous Materials** & Chemicals, Petroleum Products Handling & Transportation, **Fire Fighting & Fire Rescue**, **Safety Auditing**, **Hazard Identification** & Site Inspection and **Accident Investigation** for several significant clientele among these are **ARAMCO**, **SABIC**, **ZADCO**, **ORPC**, **KOTC**, and **AADC**. Moreover, he completed various assignments as a consultant, trainer, facilitator, auditor & designer and conducted numerous licensed international Safety, Technology and Auditing Awareness & Implementing training courses including **IMS**, **ISO 9001**, **ISO 14001**, **ISO 27001**, **ISO 17799**, **OHSAS 18001** audits & assessments. With his accomplishments and achievements, he had been a **Safety Superintendent**, **Senior Safety Official** and **Senior Process Controller** for several international petrochemical companies.

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 & Introductions*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Hazardous Materials*** *Placarding Requirements ● UN/NA Identification System ● Labeling Requirements ● Marking Requirements ● Shipping Documents ● Material Safety Data Sheets (MSDS) ● Spill Reporting Requirements ● Inherent Difficulties Associated with Existing Law ● Common Transporter Practices ● Storage Recommendations ● Hazardous Wastes*
0930 – 0945	*Break*
0945 – 1100	***Classifications of Hazardous Materials*** *Explosives and Blasting Agents ● Compressed Gases ● Poisons ● Flammable and Combustible Liquids ● Flammable Solids and Water Reactives ● Oxidizers and Organic Peroxides ● Radioactives ● Corrosives ● Other Regulated Material*
1100 – 1230	***Hazards of Chemical Incidents*** *Chemical Reactions ● Associated Hazards ● Hazardous Wastes*
1230 – 1245	*Break*
1245 – 1420	***Case Studies #1*** *Given an Incident Action Plan for Liquid Chemical Release Incident, The Emergency Response Technician (ERT) Shall Demonstrate Product Control Functions Set Out in the Emergency Response Plan and Standard Operating Procedures (SOP)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0900	***Shipping Configurations*** *Packages Other than Bulk ● Bulk Containers ● Carriage by Aircraft ● Carriage by Rail ● Carriage by Vessel ● Pipeline*
0900 – 0915	*Break*
0915 – 1045	***Resources Available to Emergency Response Personnel*** *Governmental Resources ● Local Resources ● Private Resources ● Technical Publications*
1045 – 1130	***Respiratory Protection*** *Selection of Respiratory Protection levels ● Inspection Criteria ● Maintenance Criteria ● Legal Requirements ● Donning and Doffing Procedures*
1130 – 1230	***Protective Clothing*** *Levels of Protection ● Protective Clothing Material Construction*

1230 – 1245	*Break*
1245 – 1420	***Case Studies #2*** *Given an Incident the ERT Shall Select Tools, Equipment and Materials for the Control of Liquid Chemical Releases and Identify the Precautions for Controlling Release from the Packaging/Containers and Shall Complete the Following Risks: Given a Pressure Vessel, Select the Material of Equipment to Contain Leaks from the Following Task: Valve Blowout, Valve Seat, Valve Stem Assembly Blowout and Fusible Plug*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0900	***Donning and Doffing Procedures for Protective Clothing*** *Inspection Criteria ● Donning Procedures ● Doffing Procedures ● Detailed Decontamination*
0900 – 0915	*Break*
0915 – 1045	***Initial Decision Matrix*** *Initial Approach ● Plan your Arrival ● Observations*
1045 – 1130	***Scene Considerations*** *Incident Control ● Control Zone Procedures ● Staging Area ● Evacuation ● Responders*
1130 – 1230	***Environmental Health Considerations*** *Environmental Health Goals ● Medical Surveillance Programs ● Baseline Physical Examination ● Team Safety Officer ● Air-Monitoring Programs ● Emergency Medical Plan ● Training*
1230 – 1245	*Break*
1245 – 1420	***Case Studies #3*** *Given a 55 Gallon Drum (208 L) and Applicable Tools and Materials, Demonstrate the Ability to Contain the Following Types of Leaks: Close Valves that are Open, Replace Missing Plugs, Tighten Loose Plugs, Bung Leak, Chime Leak and Forklift Puncture*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0900	***Medical Concerns*** *Victims not Contaminated with Injuries ● Victims Contaminated with Injuries ● Protection of Medical Personnel, Equipment and Facilities*
0900 – 0915	*Break*
0915 – 1045	***Hazard Identification*** *General Construction Specifications ● Guidelines for Instrument Usage ● Radiological Monitoring Instruments ● Combustibility Monitoring ● Oxygen Availability Monitoring ● Carbon Monoxide Monitoring ● Hydrogen Sulfide Monitoring*
1045 – 1130	***Hazard Identification (cont'd)*** *Organic Vapor Monitoring ● Colorimetric Tubes ● Corrosiveness Monitoring ● Sample Collecting ● Basic Material Analysis ● Peronal air-Sampling Pumps*
1130 – 1230	***Recovery Equipment*** *Pumps ● Vacuum Trucks ● Heavy Equipment*

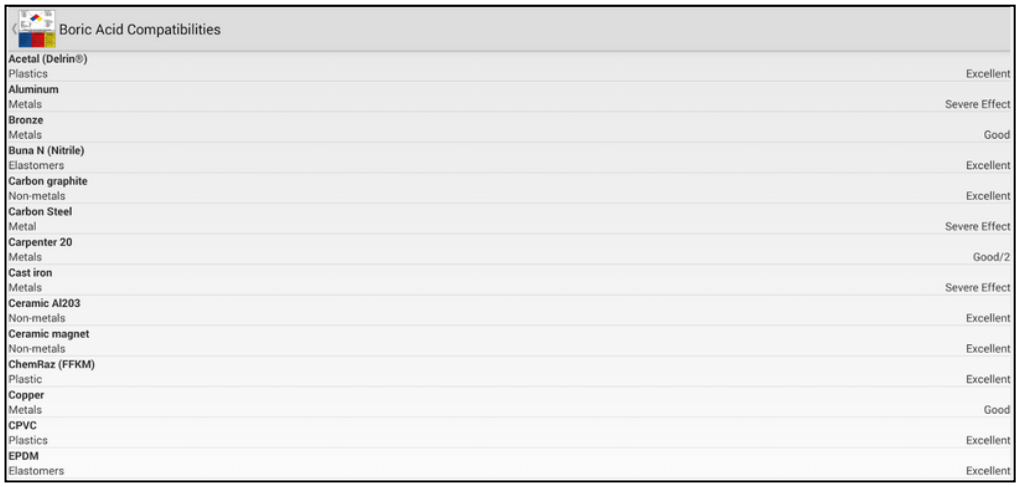
1230 – 1245	*Break*
1245 – 1420	***Case Studies #4*** *Given a 55 Gallon (208 L) Drum and an Overpack Drum, Demonstrate the Ability to Place the 55gal Drum into the Overpack Drum Using the Following Methods: Rolling Side-In, Slide-in and Slip-Over*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0900	***Confined-Space Entry Procedures*** *Definition ● Procedures ● Regulatory Requirements*
0900 – 0915	*Break*
0915 – 1045	***Incident Pre-Planning*** *Developing a Pre-Plan ● Government Requirement ● Identifying Hazards ● Determining Training and Equipment Needs*
1045 – 1215	***Scene Mitigation*** *The D.E.C.I.D.E Process ● A Highway Chemical Spill*
1215 – 1230	*Break*
1230 – 1315	***Scene Mitigation (cont'd)*** *Fire and Spill in a Chemical Storage Area ● A Spill from a Rail Tank Car*
1315 – 1345	***Open Forum***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (Hands-on Practical Sessions)

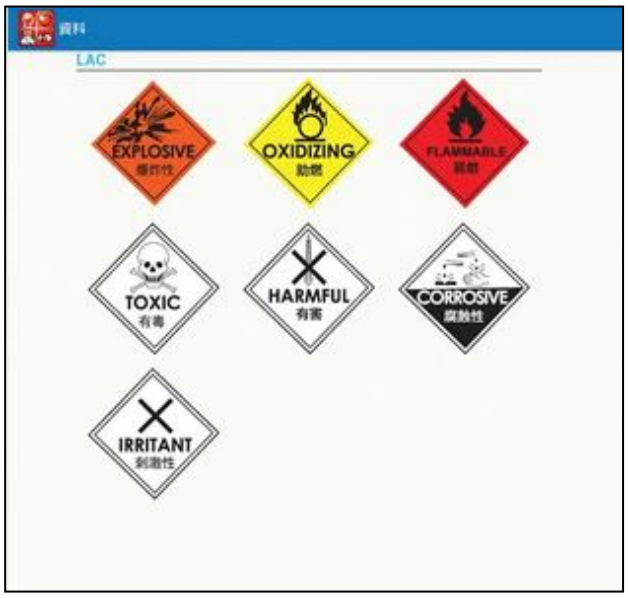
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using one of our state-of-the-art simulators; "Chemical Compatibility 1.1 Simulator", "Chemical Safety Database Simulator", "CAMEO Chemicals Suite Simulator" or "ERG 2012 Simulator".



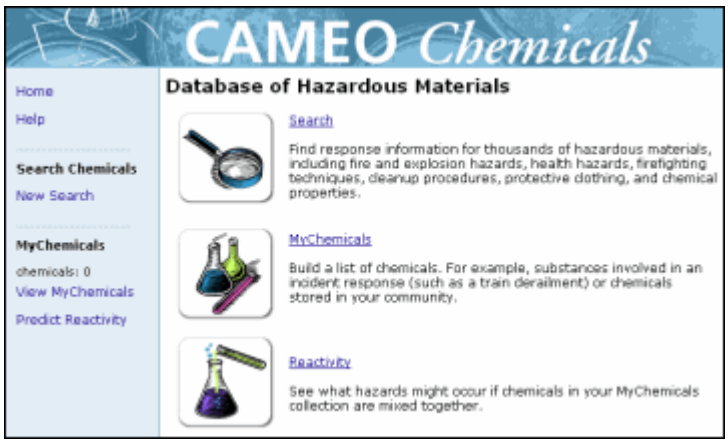
Boric Acid Compatibilities

Acetal (Delrin®)	
Plastics	Excellent
Aluminum	
Metals	Severe Effect
Bronze	
Metals	Good
Buna N (Nitrile)	
Elastomers	Excellent
Carbon graphite	
Non-metals	Excellent
Carbon Steel	
Metal	Severe Effect
Carpenter 20	
Metals	Good/2
Cast iron	
Metals	Severe Effect
Ceramic Al203	
Non-metals	Excellent
Ceramic magnet	
Non-metals	Excellent
ChemRaz (FFKM)	
Plastic	Excellent
Copper	
Metals	Good
CPVC	
Plastics	Excellent
EPDM	
Elastomers	Excellent

Chemical Compatibility 1.1 Simulator



Chemical Safety Database Simulator



CAMEO Chemicals Suite Simulator

ERG 2012 Simulator

Course Coordinator

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