

COURSE OVERVIEW HE1564
H₂S Safety Engineer
H₂S Risk Management & Emergency Procedures

Course Title

H₂S Safety Engineer: H₂S Risk Management & Emergency Procedures

Course Date/Venue

January 25-29, 2026/Meeting Room No. 04, Four Seasons Hotel, Cairo at Nile Plaza, Cairo, Egypt

Course Reference

HE1564

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.

This course is designed to provide participants with a detailed and up-to-date overview of H₂S Safety Engineer: H₂S Risk Management & Emergency Procedures. It covers the role of a safety engineer in H₂S environments, regulatory frameworks and industry standards; the importance of proactive risk management and properties and characteristics of H₂S; the toxicology of H₂S exposure and H₂S detection and monitoring; the personal protective equipment (PPE) for H₂S, risk awareness and safety culture; and the hazard identification and risk assessment (HIRA).

Further, the course will also discuss the H₂S release scenarios and consequence analysis, engineering controls for H₂S and administrative and procedural controls; the emergency response planning for H₂S, legal and regulatory compliance and H₂S emergency response organization; the H₂S alarm and evacuation systems and self-rescue and escape procedures; the rescue operations in H₂S zones, first aid and medical response for H₂S exposure and training and drills; the advanced risk modeling and simulation, learning from major H₂S incidents and crisis management in H₂S emergencies; and the integration with process safety management (PSM).

During this interactive course, participants will learn the environmental impact of H₂S releases and contractor and third-party management and H₂S safety procedures and emergency response simulation exercise; the routine H₂S monitoring programs and safety audits and inspections; the incident investigation process and root cause analysis for continuous learning; the safety leadership behaviors and coaching and mentoring workers in H₂S safety; and encouraging stop-work authority and building trust and accountability.

Course Objectives

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

- Get certified as a “*Certified H₂S Safety Engineer*”
- Discuss the role of a safety engineer in H₂S environments, regulatory frameworks and industry standards and importance of proactive risk management
- Recognize the properties and characteristics of H₂S, toxicology of H₂S exposure and H₂S detection and monitoring
- Apply personal protective equipment (PPE) for H₂S, risk awareness and safety culture and hazard identification and risk assessment (HIRA)
- Carryout H₂S release scenarios and consequence analysis, engineering controls for H₂S and administrative and procedural controls
- Apply emergency response planning for H₂S, legal and regulatory compliance and H₂S emergency response organization
- Recognize H₂S alarm and evacuation systems and implement self-rescue and escape procedures, rescue operations in H₂S zones, first aid and medical response for H₂S exposure and training and drills
- Illustrate advanced risk modeling and simulation, learning from major H₂S incidents, crisis management in H₂S emergencies and integration with process safety management (PSM)
- Identify environmental impact of H₂S releases and apply contractor and third-party management, H₂S safety procedures and emergency response simulation exercise
- Develop routine H₂S monitoring programs and apply safety audits and inspections, incident investigation process and root cause analysis for continuous learning
- Discuss safety leadership behaviors perform coaching and mentoring workers in H₂S safety, encourage stop-work authority and build trust and accountability

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 H₂S risk management and emergency procedures for HSE managers, supervisors and safety officers, occupational health professionals and medical staff assigned to H₂S facilities, emergency response, firefighting and rescue team members and those personnel required to work in or around H₂S-contaminated environments.

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)

- (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. Successful candidate will be certified as a “*Certified H₂S Safety Engineer*”. 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 * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *				
		Haward Technology Middle East Continuing Professional Development (HTME-CPD)		
CEUs				
<u>CEU Official Transcript of Records</u>				
TOR Issuance Date:		14-Nov-24		
HTME No.		74851		
Participant Name:		Waleed Al Habeeb		
<hr/>				
Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE1564	H ₂ S Safety Engineer: H ₂ S Risk Management & Emergency Procedures	Nov 10-14, 2024	30	3.0
<hr/>				
Total No. of CEU's Earned as of TOR Issuance Date				3.0
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<p>TRUE COPY</p>  <p>Jaryl Castillo Academic Director</p>				
<p>Haward Technology has been approved as an Accredited 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 1-2018 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 1-2018 Standard.</p> <p>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.</p>				
<p>Haward Technology is accredited by</p> 				
P.O. Box 26070, Abu Dhabi, United Arab Emirates Tel.: +971 2 3091 714 E-mail: info@haward.org Website: www.haward.org				
* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *				

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.

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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.



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. Saad Bedir, BSc, NEBOSH-IGC, NEBOSH-ENV, is a **Senior Fire, Health, Safety & Environment (HSE) Consultant** with over **30 years** of extensive experience in the **Power, Petrochemical and Oil & Gas** industries. He is a **NEBOSH Approved Instructor** for various certification programs. He is well-versed in the areas of **NEBOSH International General Certificate, NEBOSH Certificate in Environmental Management, H₂S Risk Management & Emergency Procedures, H₂S Hazard Awareness, H₂S Breathing Apparatus, Health, Fire, Safety, Security & Environmental Codes of Practice, Legislations and Procedures, Active and Positive Fire Fighting, Fire & Gas Detection Systems, Fire Fighting Systems, Fire Proofing, ESD, Escape Routes, Mobile Crane Operation, Heavy Lifting Equipments, Scaffolding, Rigging Slings, the implementation of OHSAS 18001, ISO 9001, ISO 14001, QHSE Management Planning, Crisis & Business Continuity Management Planning, Emergency Response & Procedures, Industrial Security Risk Assessment & Management, Environmental Impact Assessment (EIA), Behavioural Safety, Occupation Safety, Incident & Accident Investigation, Integrated EHS Aspects, Risk Assessment & Hazard Identification, Environmental Audits, Chemical Handling, Hazardous & Non-Hazardous Waste Management, Confined Space Safety, SHEMS Principles, Process Safety, Basic & Advanced Construction Safety, Air Quality Management, Safety & Occupational Health Awareness, Loss Control, Marine Pollution Hazards & Control, Ground Contamination & Reclamation Processes, Waste Management & Recycling, Clean Energy & Power Saving, FMEA, PSM, HAZMAT/HAZCOM, HAZOP, HAZWOPER, HAZID, HSEIA, QRA, Hazardous Area Classification and Radiation Protection. Further, he is also well-versed in **Performance Standards, Statistical Report Writing, Basic Motivation Management, Performance Assessment & Appraisal, Manpower Planning, Managing & Coordinating Training, Strategic Talent Management, Developing Others, Managing Employees Performance, Performance Evaluation and Human Resource Management**. Presently, he is the **HSE Director** for one of the largest and renowned companies in the Middle East, wherein he takes charge of all HSE and security operations of the company.**

Mr. Saad's vast professional experience in directing and managing health, safety and the environment aspects as per **OSHA framework** and guidelines can be traced back to his stint with a few international companies like **Saudi ARAMCO, CONOCO, Kuwait Oil Co. (KOC)**, where he worked as the Field HSE Senior Engineer handling major projects and activities related to the discipline. Through these, Saad gained much experience and knowledge in the implementation and maintenance of international safety standards such as the National Fire Protection Association (**NFPA**), the American Petroleum Institute (**API**), Safety of Life at Sea (**SOLAS**) and Safety for Mobile Offshore Drilling Unit (**MODU**).

Mr. Saad has **NEBOSH** certificate which includes health & safety measures including:

- Fire fighting management system
- Rescue mechanisms (Escaping routes, Rope rescue, and emergency evacuation Plan)
- Machinery Safety requirement
- Occupational health measures & requirement

Mr. Saad has a **Bachelor** degree in **Chemistry**. Further, he is a **Certified Instructor/Trainer**, an **Approved Tutor** in **NEBOSH International General Certificate**, an **Approved Tutor** in **NEBOSH Certificate in Environmental Management**, a **Certified Lead Auditor** for **OHSAS 18001, ISO 9001, ISO 14001** and a **member** of the **Egyptian Syndicate & Scientific Professions**. His passion for development and acquiring new skills and knowledge has taken him all over the Middle East to attend and share his expertise in numerous trainings and workshops.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 25th of January 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to H₂S Safety Engineering Role of a Safety Engineer in H ₂ S Environments • Regulatory Frameworks & Industry Standards (OSHA, API, NIOSH) • Importance of Proactive Risk Management • Case Studies of Past Incidents
0930 – 0945	Break
0945 – 1030	Properties & Characteristics of H₂S Physical & Chemical Properties • Behavior Under Different Temperatures & Pressures • Solubility & Reactivity with Other Substances • H ₂ S Presence in Oil, Gas & Petrochemical Industries
1030 – 1130	Toxicology of H₂S Exposure Routes of Entry (Inhalation, Skin, Eye Contact) • Dose-Response Relationship & IDLH Levels • Short-Term versus Chronic Health Effects • Emergency Medical Treatment Guidelines
1130 – 1215	H₂S Detection & Monitoring Fixed Detection Systems • Portable Gas Detectors & Personal Monitors • Calibration & Maintenance of Sensors • Alarm Setting Levels & Response
1215 – 1230	Break
1230 – 1330	Personal Protective Equipment (PPE) for H₂S Respiratory Protection – SCBA, SABA, Escape Sets • Chemical Protective Clothing Requirements • Eye & Skin Protection • PPE Inspection & Limitations
1330 – 1420	Risk Awareness & Safety Culture Developing Safety Awareness Among Employees • Communication Strategies for H ₂ S Hazards • Role of Leadership in Enforcing Safety Culture • Behavioral Safety & Chronic Unease
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: Monday, 26th of January 2026

0730 – 0830	Hazard Identification & Risk Assessment (HIRA) Identifying H ₂ S Release Sources • Assessing Likelihood & Severity • Tools for HIRA (HAZOP, JSA) • Risk Acceptance Criteria
0830 – 0930	H₂S Release Scenarios & Consequence Analysis Small Leaks versus Catastrophic Releases • Dispersion Modeling Principles • Lethal Concentration Zones • Domino Effect & Escalation Hazards
0930 – 0945	Break
0945 – 1100	Engineering Controls for H₂S Ventilation & Dilution Systems • Containment & Scrubbing Units • Flaring & Neutralization • Fail-Safe Design Principles

1100 – 1215	Administrative & Procedural Controls Permit-to-Work System for H ₂ S Zones • Isolation & Lock-Out/Tag-Out (LOTO) • Safe Operating Procedures (SOPs) • Restricted Entry Protocols
1215 – 1230	Break
1230 – 1330	Emergency Response Planning for H₂S Risk-Based Planning Approach • Identifying Credible Worst-Case Scenarios • Emergency Response Tiers (Local, Site, External) • Key Roles & Responsibilities
1330 – 1420	Legal & Regulatory Compliance Local Regulations for H ₂ S Exposure • International HSE Standards (API RP 55, OSHA 29 CFR 1910.1000) • Compliance Audits & Inspections • Reporting & Documentation Requirements
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: Tuesday, 27th of January 2026

0730 – 0830	H₂S Emergency Response Organization Incident Command Structure (ICS) • Roles of Response Teams (Fire, Medical, Rescue) • Chain of Command During Incidents • Coordination with External Agencies
0830 – 0930	H₂S Alarm & Evacuation Systems Alarm Types – Audible, Visual, Vibration • Muster Point Planning & Zoning • Evacuation Route Design • Drills & Alarm Response Protocols
0930 – 0945	Break
0945 – 1100	Self-Rescue & Escape Procedures Immediate Response Upon Alarm Activation • Donning & Using Escape Respirators • Escape Route Selection • Safe Assembly Area Procedures
1100 – 1215	Rescue Operations in H₂S Zones Rescue Team Equipment & Readiness • Rescue Entry Procedures & Safe Approach • Victim Retrieval Techniques • Post-Rescue Decontamination
1215 – 1230	Break
1230 – 1330	First Aid & Medical Response for H₂S Exposure Immediate First Aid Steps (Fresh Air, Oxygen Therapy) • Cardiopulmonary Resuscitation (CPR) Considerations • Use of Resuscitators & Hyperbaric Oxygen Therapy • Coordination with Medical Facilities
1330 – 1420	Training & Drills Emergency Drills (Table-Top, Partial, Full-Scale) • Frequency & Evaluation Criteria • Recording & Analyzing Drill Performance • Lessons Learned Integration
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: Wednesday, 28th of January 2026

0730 – 0830	Advanced Risk Modeling & Simulation Gas Dispersion Software (PHAST, ALOHA, HYSYS) • Predictive Analysis for Exposure Zones • Probabilistic Risk Assessment (PRA) • Limitations & Uncertainties
0830 – 0930	Learning from Major H₂S Incidents Case Study: Sour Gas Blowouts • Refinery & Plant Accidents Involving H ₂ S • Offshore Drilling Incidents • Lessons for Prevention & Mitigation
0930 – 0945	Break
0945 – 1100	Crisis Management in H₂S Emergencies Media & Stakeholder Communication • Decision-Making Under Uncertainty • Coordination with Regulators • Psychological Impact on Workforce
1100 – 1215	Integration with Process Safety Management (PSM) H ₂ S Within PSM Framework • Safety Instrumented Systems (SIS) • Barrier Management & Bow-Tie Analysis • KPIs for H ₂ S Safety Performance
1215 – 1230	Break
1230 – 1330	Environmental Impact of H₂S Releases Air Quality Effects & Community Exposure • Environmental Monitoring Techniques • Mitigation Measures for Ecological Impact • Regulatory Reporting Obligations
1330 – 1420	Contractor & Third-Party Management H ₂ S Awareness for Contractors • Qualification & Certification Requirements • Contractor Emergency Integration • Audit & Compliance Monitoring
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 Four

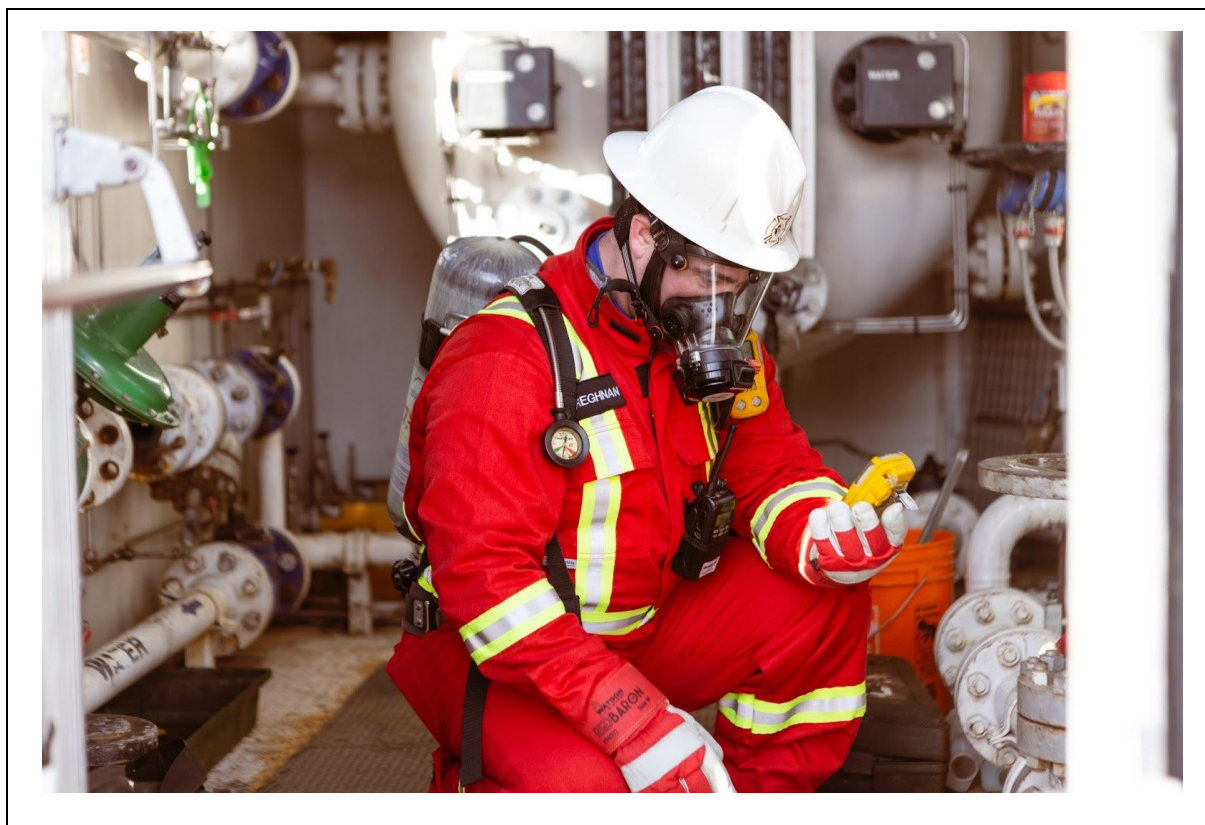
Day 5: Thursday, 29th of January 2026

0730 – 0830	H₂S Safety Procedures Workshop Developing SOPs for H ₂ S Areas • Role-Play Scenarios for High-Risk Tasks • Group Exercise – Writing a Risk-Based SOP • Review & Critique Session
0830 – 0930	Emergency Response Simulation Exercise Mock H ₂ S Release Scenario • Detection, Alarm, Evacuation, & Rescue Sequence • Role-Based Participation • Debriefing & Performance Analysis
0930 – 0945	Break
0945 – 1100	Monitoring, Auditing & Continuous Improvement Routine H ₂ S Monitoring Programs • Safety Audits & Inspections • Incident Investigation Process • Root Cause Analysis for Continuous Learning
1100 – 1230	Leadership in H₂S Risk Management Safety Leadership Behaviors • Coaching & Mentoring Workers in H ₂ S Safety • Encouraging Stop-Work Authority • Building Trust & Accountability
1230 – 1245	Break

1245 - 1300	Competency Assessment <i>Knowledge-Based Assessment • Practical Demonstration of Emergency Response • Evaluation of PPE Use & Rescue Techniques • Competency Certification Criteria</i>
1300 – 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 - 1415	COMPENCY EXAM
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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