COURSE OVERVIEW HE2167-2D

HAZOP Hazard Analysis & HAZID Hazard Identification Methods

Course Title
HAZOP Hazard Analysis & HAZID Hazard Identification Methods

Course Date/Venue
August 16-17, 2026/TBA Meeting Room, Al Bandar Rotana-Creek, Dubai, UAE

Course Reference
HE2167-2D

Course Duration/Credits
Two days/1.2 CEUs/12 PDHs

1.2 CEUs (12 PDHs) AWARD

Course Description

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

This course is designed to provide participants with a detailed and up-to-date overview of HAZOP Hazard Analysis & HAZID Hazard Identification Methods. It covers the principles of process safety management, major accident prevention, risk management lifecycle, international best practices and regulatory framework; the principles and framework of ISO 31000 risk management, risk acceptance criteria, ALARP concept and selection of appropriate risk assessment methods; the hazard identification and risk analysis methodology structuring; and the HAZID methodology, preliminary risk analysis (PRA) and checklist-based hazard reviews.

During this interactive course, participants will learn the fault tree analysis (FTA), advanced hazard analysis and failure modes and effects analysis (FMEA); the HAZOP methodology and HAZOP application and correlation with other hazard analysis techniques; the principles of semi-quantitative risk assessment, independent protection layers (IPLs), frequency estimation and risk reduction; the relationship between HAZOP and LOPA; the safety integrity level (SIL) assessment; and the international best practices covering safety instrumented functions (SIF), SIL determination methodologies and international hazard analysis practices.

Course Objectives/Outcomes & Benefits for the Participants

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

- Apply and gain a comprehensive knowledge on HAZOP hazard analysis and HAZID hazard identification methods
- Discuss the principles of process safety management, major accident prevention, risk management lifecycle, international best practices and regulatory framework
- Explain the principles and framework of ISO 31000 risk management, risk acceptance criteria and ALARP concept and selection of appropriate risk assessment methods
- Carryout hazard identification, risk analysis methodology structuring, HAZID methodology and preliminary risk analysis (PRA) and checklist-based hazard reviews
- Apply fault tree analysis (FTA), advanced hazard analysis and failure modes and effects analysis (FMEA)
- Carryout HAZOP methodology and HAZOP application and correlation with other hazard analysis techniques
- Discuss the principles of semi-quantitative risk assessment, independent protection layers (IPLs), frequency estimation and risk reduction and relationship between HAZOP and LOPA
- Apply safety integrity level (SIL) assessment and international best practices covering safety instrumented functions (SIF), SIL determination methodologies and international hazard analysis practices

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 HAZOP hazard analysis and HAZID hazard identification methods for safety engineers, HAZOP team leaders, risk assessment specialists, consultants involved in process safety and risk assessments and other technical staff.

Course Fee

US$ 2,750 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 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

Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 11-Nov-25

HTME No. 74851

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE2167-2D	HAZOP Hazard Analysis & HAZID Hazard Identification Methods	Nov 10-11, 2025	12	1.2

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

TRUE COPY

Jaryl Castillo
Academic Director

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.

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 | 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**. 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 **1.2 CEUs** (Continuing Education Units) or **12 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. 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.

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.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients

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, 16th of August 2026***
0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Process Safety & Risk Management*** *Principles of Process Safety Management and Major Accident Prevention • Hazard, Risk, Consequence, Likelihood, and Uncertainty Definitions • Risk Management Lifecycle in Industrial Facilities • International Best Practices and Regulatory Framework*
0930 – 0945	*Break*
0945 – 1030	***Risk Theory Review (ISO 31000 & ISO 31010)*** *Principles and Framework of ISO 31000 Risk Management • Overview of ISO 31010 Risk Assessment Techniques • Risk Acceptance Criteria and ALARP Concept • Selection of Appropriate Risk Assessment Methods*
1030 – 1100	***Hazard Identification & Risk Analysis Methodology Structuring*** *Hazard Identification Strategy During Project Lifecycle • Methodology Selection Criteria for Different Industries and Project Phases • Qualitative, Semi-Quantitative and Quantitative Analysis Methods • Integration of Hazard Studies Within Engineering Design*
1100 - 1130	***HAZID Methodology*** *Objectives, Principles and Scope of HAZID • HAZID Guidewords and Hazard Categories • Team Composition, Facilitation and Documentation • Risk Ranking and Recommendation Development*
1130 - 1215	***Practical Exercise – Workshop (Small Groups)*** *Conducting a HAZID Session for an Industrial Process • Identification of Hazards Using Structured Guidewords • Risk Ranking Using a Qualitative Risk Matrix • Presentation and Discussion of Findings*

1215 – 1230	*Break*
1230 – 1300	***Preliminary Risk Analysis (PRA) & Checklist-Based Hazard Reviews*** *Preliminary Risk Analysis Methodology • Development and Use of Engineering Checklists • Comparison Between HAZID and PRA • Documentation of Findings and Recommendations*
1300 - 1330	***Practical Exercise – Workshop (Small Groups)*** *Performing PRA Using an Engineering Case Study • Checklist Application • Hazard Prioritization • Group Presentation*
1330 – 1400	***Fault Tree Analysis (FTA)*** *Principles of Deductive Failure Analysis • Logic Gates (AND, OR, Voting, Inhibit) • Development of Fault Trees • Quantitative and Qualitative Applications*
1400 – 1420	***Practical Exercise – Workshop (Small Groups)*** *Construction of a Fault Tree • Identification of Initiating Events • Root Cause Analysis • Presentation of Results*
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, 17th of August 2026***

0730 – 0830	***Advanced Hazard Analysis*** *Review of HAZID Outputs • Transition from HAZID to Detailed Studies • Relationship Among Different Hazard Analysis Techniques • Risk Reduction Hierarchy*
0830 – 0900	***Failure Modes & Effects Analysis (FMEA)*** *Objectives and Methodology of FMEA • Failure Modes, Causes and Effects • Risk Priority Number (RPN) Calculation • Corrective and Preventive Action Development*
0900 - 0930	***Practical Exercise – Workshop (Small Groups)*** *Performing FMEA on Selected Equipment • Determining Severity, Occurrence and Detection Ratings • Calculating RPN • Developing Mitigation Measures*
0930 – 0945	*Break*
0945 – 1030	***HAZOP Methodology*** *HAZOP Principles and Objectives • Guidewords and Process Parameters • Team Roles and Responsibilities • Documentation Using HAZOP Worksheets*
1030 - 1130	***HAZOP Application & Correlation with Other Hazard Analysis Techniques*** *Relationship Between HAZOP, HAZID, FMEA, FTA and LOPA • Selection Criteria for Each Methodology • Engineering Lifecycle Application • International Industry Practices*
1130 - 1200	***Practical Exercise – Workshop (Small Groups)*** *Complete HAZOP Study on a P&ID • Identification of Deviations • Determination of Causes and Consequences • Development of Recommendations*
1200 - 1230	***Layer of Protection Analysis (LOPA)*** *Principles of Semi-Quantitative Risk Assessment • Independent Protection Layers (IPLs) • Frequency Estimation and Risk Reduction • Relationship Between HAZOP and LOPA*
1230 – 1245	*Break*

1245 – 1300	***Practical Exercise – Workshop (Small Groups)*** *LOPA Analysis for Selected HAZOP Scenarios • Evaluation of Existing Safeguards • Determination of Additional IPLs • Risk Reduction Calculations*
1300 - 1320	***Safety Integrity Level (SIL) Assessment & International Best Practices*** *IEC 61508 and IEC 61511 Overview • Safety Instrumented Functions (SIF) • SIL Determination Methodologies • Review of International Hazard Analysis Practices and Case Studies*
1320 – 1340	***Practical Exercise – Workshop (Small Groups)*** *SIL Determination Using LOPA Results • Selection of Safety Instrumented Functions • Review of Industry Case Studies • Final Integrated Hazard Analysis Exercise and Group Presentations*
1340 – 1355	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1355 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

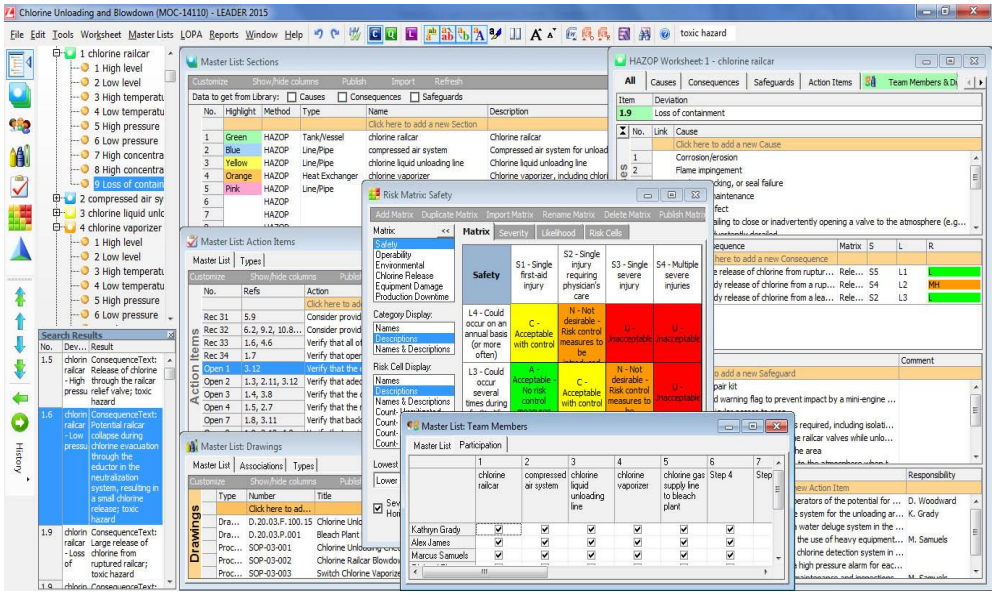
Course Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Understand the principles of process safety and risk management in accordance with ISO 31000 and ISO 31010
- Select appropriate hazard identification and risk assessment methodologies for different project phases
- Conduct HAZID studies using structured guidewords and qualitative risk ranking techniques
- Perform Preliminary Risk Analysis (PRA) and checklist-based hazard reviews.
- Develop and interpret Fault Tree Analysis (FTA) and Failure Modes and Effects Analysis (FMEA)
- Plan, facilitate, and document HAZOP studies using internationally recognized practices
- Apply Layer of Protection Analysis (LOPA) to evaluate independent protection layers and determine residual risk
- Understand Safety Integrity Level (SIL) concepts and their application under IEC 61508 and IEC 61511
- Integrate HAZID, HAZOP, FTA, FMEA, LOPA, and SIL into a comprehensive process safety management framework
- Apply international best practices in hazard identification, risk analysis, and process safety decision-making through practical team-based workshops

Simulator (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 our state-of-the-art Haward "Haward PHA/HAZOP" Simulator.



Haward PHA/HAZOP Simulator

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org