



COURSE OVERVIEW HE2019 **Certified HAZOP Member**

Course Title

Certified HAZOP Member

Course Date/Venue

January 17-21, 2027/TBA Meeting Room,
Doubletree By Hilton Doha-Al Sadd, Doha,
Qatar

Course Reference

HE2019

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 our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of Certified HAZOP Member. It covers the importance of process safety, common types of industrial hazards, difference between risk and hazard and process safety management (PSM) standards; the process hazard analysis (PHA) techniques, principles and terminology of HAZOP and HAZOP guide words and parameters; the HAZOP leader and scribe responsibilities and role of discipline engineers; and the importance of diverse expertise and rules for effective participation.



Further, the course will also discuss the PHA software tools, features and functionalities; the benefits of digital versus manual recording and industry practices in digital documentation; the PFDs, P&IDs and process node identification and segmentation; the HAZOP deviation analysis techniques and standard worksheet structure; the record deviations, causes, consequences and safeguards and recommendations; and the consistency and clarity in documentation.



During this interactive course, participants will learn the pre-work and planning activities, kickoff checklist and advanced P&ID review techniques; the critical deviations, multiple causes, classifying consequence severity and evaluating safeguard adequacy; the risk assessment, risk ranking matrix, functional safety and instrumented protective systems; the recommendations management and action tracking, process mode considerations, batch operation hazards and special hazards in startup/shutdown; the HAZOP variations and adaptations, subdividing process into modes and operating phases and HAZOP for utilities and ancillary systems; the leadership and facilitation of HAZOP studies, regulatory requirements, HAZOP standards and linking HAZOP to LOPA and other risk tools; and the HAZOP in digital/smart plants, auditing and validation of HAZOP studies and human factors in HAZOP.

Course Objectives/Outcomes & Benefits for the Participants

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

- Get certified as an “*Certified HAZOP Member*”
- Discuss the hazards identification and analysis techniques including the techniques of hazard identification and analysis – HAZOP
- Identify the process exercises for hazard identification and the application of HAZOP techniques including deviations, causes, consequences and safeguards recommendations
- Explain PFD and P&IDs review during HAZOP, HAZOP variations, guidelines for subdividing the process into modes
- Recognize process node characteristics, functional safety, risk ranking using the approved matrix and HAZOP safety standards
- Discuss the importance of process safety including the common types of industrial hazards, difference between risk and hazard and process safety management (PSM) standards
- Carryout process hazard analysis (PHA) techniques and explain the principles and terminology of HAZOP and HAZOP guide words and parameters
- Discuss HAZOP leader and scribe responsibilities, role of discipline engineers, importance of diverse expertise and rules for effective participation
- Identify PHA software tools, features and functionalities, benefits of digital versus manual recording and industry practices in digital documentation
- Read and interpret PFDs and P&IDs and apply process node identification and segmentation and HAZOP deviation analysis techniques
- Describe standard worksheet structure, record deviations, causes, consequences and apply safeguards and recommendations and consistency and clarity in documentation
- Initiate pre-work and planning activities, kickoff checklist, facilitating the discussion and advanced P&ID review techniques



- Discuss critical deviations, analyze multiple causes, classify consequence severity and evaluate safeguard adequacy
- Illustrate risk assessment and risk ranking matrix, recognize functional safety and instrumented protective systems and apply recommendations management and action tracking
- Discuss process mode considerations, batch operation hazards and special hazards in startup/shutdown
- Determine HAZOP variations and adaptations, subdividing process into modes and operating phases and HAZOP for utilities and ancillary systems
- Discuss leadership and facilitation of HAZOP studies, regulatory requirements, HAZOP standards and linking HAZOP to LOPA and other risk tools
- Recognize HAZOP in digital/smart plants, audit and validation of HAZOP studies and human factors in HAZOP

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 hazard identification and operability (HAZOP) for safety engineers, area managers, safety/environment personnel, plant operators, HSE staff and other technical staff.

Training Methodology

Our courses employ an interactive, learner-centred methodology that integrates theoretical knowledge with practical application. The training is delivered through a suitable combination of some or all of the following methods, selected according to the course content and learning objectives:

- Instructor-led presentations and facilitated discussions
- Practical workshops and participant presentations
- Hands-on exercises and real-world case studies
- Equipment demonstrations and technical drawings
- Hardware- and software-based simulations
- Gamification & Role Play in soft-skills courses only
- Virtual Reality (VR) and Augmented Reality (AR)
- Instructional videos and other relevant training resources

This blended approach encourages active participation, strengthens practical skills and supports the effective application of acquired knowledge in the workplace.

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 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 HAZOP Member*”. 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

CEU Official Transcript of Records

TOR Issuance Date:

14-Nov-24

HTME No.

74851

Participant Name:

Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE2019	Certified HAZOP Member	Nov 10-14, 2024	30	3.0

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

3.0

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












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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 Fee

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.

Accommodation

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



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, H₂S, 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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 17th of January 2027

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 – 0900	Introduction to Process Safety & Hazard Identification Definition & Importance of Process Safety • Common Types of Industrial Hazards • Difference Between Risk & Hazard • Overview of Process Safety Management (PSM) Standards
0900 – 0930	Overview of Process Hazard Analysis (PHA) Techniques Introduction to Qualitative versus Quantitative Methods • Comparison of PHA Tools (What-If, FMEA, HAZID, HAZOP) • Selection Criteria for PHA Methods • PHA Implementation Timeline in Project Lifecycle
0930 - 0945	Break
0945 – 1035	Principles & Terminology of HAZOP History & Evolution of HAZOP • Key HAZOP Terms: Deviations, Causes, Consequences • Nodes, Guide Words, Parameters • Role of HAZOP Team
1035 – 1230	Understanding HAZOP Guide Words & Parameters Common Guide Words: No, More, Less, As Well As, etc. • Parameters: Flow, Pressure, Temperature, Level • Application Techniques • Examples & Exercises
1230 - 1245	Break
1245 – 1300	Team Composition & Roles in HAZOP HAZOP Leader & Scribe Responsibilities • Role of Discipline Engineers • Importance of Diverse Expertise • Rules for Effective Participation
1300 - 1420	Tools & Software Used in HAZOP Studies Introduction to PHA Software Tools (PHAWorks, HAZOP Manager, etc.) • Features & Functionalities • Benefits of Digital versus Manual Recording • Industry Practices in Digital Documentation
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, 18th of January 2027

0730 – 0830	Reading & Interpreting PFDs & P&IDs Symbols & Legends in P&IDs • Identifying Process Flow Sequences • Understanding Control Loops & Interlocks • Instrumentation & Alarms in Diagrams
0830 – 0930	Process Node Identification & Segmentation Defining Nodes in Continuous & Batch Processes • Guidelines for Node Selection • Node Segmentation Exercises • Avoiding Over/Under Segmentation
0930 - 0945	Break

0945 – 1035	HAZOP Deviation Analysis Techniques Deviation Generation Matrix • Systematic Deviation Recording • Root Cause Identification • Consequence Development Strategies
1035 – 1230	HAZOP Worksheet Development Standard Worksheet Structure • Recording Deviations, Causes, Consequences • Safeguards & Recommendations • Consistency & Clarity in Documentation
1230 – 1245	Break
1245 – 1300	Initiating a HAZOP Session (Simulated) Pre-Work & Planning Activities • Kickoff Checklist • Facilitating Discussion • Mock HAZOP Example (Case Study Intro)
1300 – 1345	Advanced P&ID Review Techniques Identifying Safety-Critical Elements • Interlock Verification • Reviewing Utility Systems • Managing Revisions in HAZOP Sessions
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, 19th of January 2027

0730 – 0830	Real-Life HAZOP Session Simulation Select a Case Study (e.g., Distillation Unit, Compressor Train) • Assign HAZOP Roles • Group Walkthrough of a Node • Capture Findings in Real-Time
0830 – 0930	Deviations, Causes, Consequences & Safeguards Deep Dive into Critical Deviations • Analyzing Multiple Causes • Classifying Consequence Severity • Evaluating Safeguard Adequacy
0930 – 0945	Break
0945 – 1035	Risk Assessment & Risk Ranking Matrix Risk Matrix Development • Frequency & Severity Scales • Risk Acceptance Criteria • Prioritizing Recommendations
1035 – 1230	Functional Safety & Instrumented Protective Systems Overview of IEC 61511 / 61508 • Safety Instrumented Systems (SIS) • SIL Assessment Overview • Integration of SIS into HAZOP
1230 – 1245	Break
1245 – 1300	Recommendations Management & Action Tracking Categorizing Actions (Critical, Major, Minor) • Assigning Responsibilities • Follow-Up & Verification • Communication with Stakeholders
1300 – 1345	HAZOP for Batch & Continuous Processes Process Mode Considerations • Batch Operation Hazards • Special Hazards in Startup/Shutdown • Case Examples for Both Process Types
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, 20th of January 2027

0730 – 0830	HAZOP Variations & Adaptations Procedural HAZOP • Control HAZOP • Human Factors HAZOP • Limitations & Adaptations
0830 – 0930	Subdividing Process into Modes & Operating Phases Normal, Startup, Shutdown, Emergency • Phase-Based HAZOP Technique • Developing Phase-Specific Guide Words • Documentation of Phase-Specific Hazards
0930 - 0945	Break
0945 – 1035	HAZOP for Utilities & Ancillary Systems Steam, Air, Nitrogen, Water Systems • Indirect Hazards • Integration with Main Process HAZOP • Case-Based Discussion
1035 - 1230	Leadership & Facilitation of HAZOP Studies Characteristics of an Effective Facilitator • Group Dynamics & Conflict Management • Steering Discussions & Decision Making • Summary & Wrap-Up Techniques
1230 - 1245	Break
1245 – 1300	Regulatory Requirements & HAZOP Standards OSHA PSM & EPA RMP • API RP 750 / 752 / 753 • IEC & ISO Guidance • KSpecific or National Standards
1300 - 1345	Linking HAZOP to LOPA & Other Risk Tools When HAZOP Results Trigger LOPA • Introduction to Initiating Events & IPLs • Bridging Gap Between HAZOP & QRA • Integrated Risk Management Approach
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

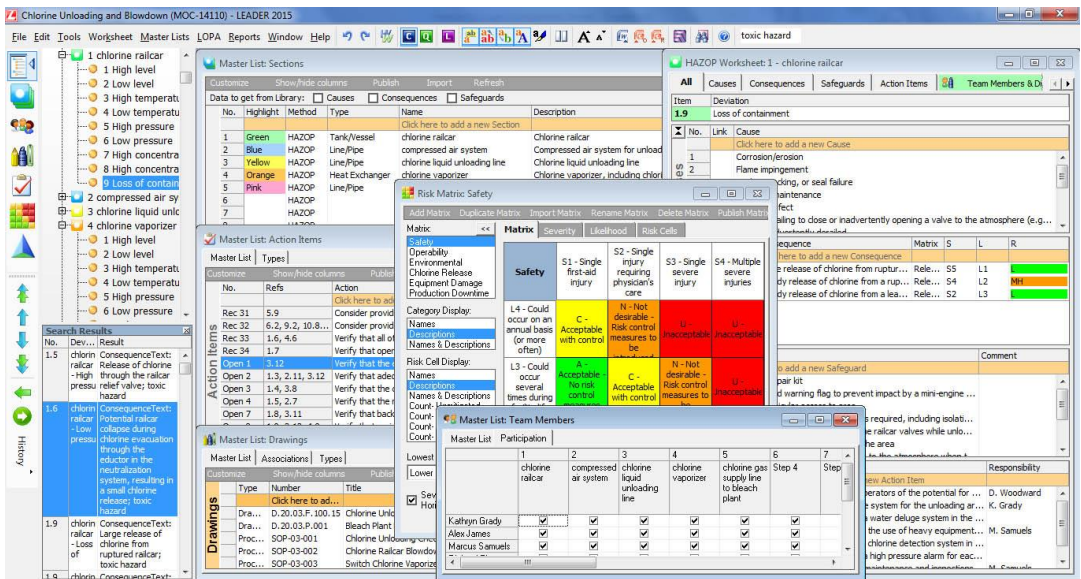
Day 5: Thursday, 21st of January 2027

0730 - 0830	Complex Case Studies & Lessons Learned HAZOP Failures & Incident Case Histories • Root Causes & Analysis Breakdown • Group Discussion & Reflection • Best Practices to Avoid Pitfalls
0830 – 0930	HAZOP in Digital/Smart Plants Digital Twin Integration • Real-Time Hazard Monitoring • Using SCADA/DCS Data for Risk Detection • HAZOP 4.0 Trends
0930 – 0945	Break
0945 -1100	Audit & Validation of HAZOP Studies How to Audit a HAZOP • Verification versus Validation • Quality Assurance in HAZOP • Reporting & Retention Practices
1100 – 1200	Human Factors in HAZOP Ergonomics & Control Room Design • Cognitive Failure Analysis • Human Error Impact Assessment • Interface & Alarm Rationalization
1200 - 1215	Break

1215 - 1300	Practical Group Workshop & Final Simulation <i>Live Simulation with Rotating Leadership • Mixed Process Nodes (Multiple Units) • Real-Time Risk Matrix Integration • Recommendations & Final Reporting</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	COMPETENCY EXAM
1415 - 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

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 PHA/HAZOP Software.



Haward PHA/HAZOP Simulator

Course Coordinator

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