

COURSE OVERVIEW HE1820

Professional Process Safety Inspector (PPSI)
Module 1: Fundamentals of Process Safety

Course Title

Professional Process Safety Inspector (PPSI):
 Module 1: Fundamentals of Process Safety

Course Date/Venue

February 04-08, 2024/The Beluga Meeting
 Room, The H Dubai Hotel, Sheikh Zayed Rd -
 Trade Centre, Dubai, UAE

Course Reference

HE1820

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 certification program is designed to train delegates on Process Safety Inspection and certify them as Professional Process Safety Inspectors. The program comprises of 4 modules that shall be taken in order:-



- Module 1: Fundamentals of Process Safety
- Module 2: Process Safety Management (PSM) & Regulatory Framework
- Module 3: Human Factors & Cultural Aspects
- Module 4: Process Safety Auditing & Site Inspection



Module 1 of this program is designed to provide participants with a detailed and up-to-date overview of Fundamentals of Process Safety. It covers the process safety and the major industrial accidents and their impacts; the importance of process safety in the industrial setting; the basic terminologies and definitions; and the process safety management (PSM), hazard identification, HAZOP and What-if analysis.

During this interactive course, participants will learn the risk assessment and risk matrix and its application; the principles of layers of protection analysis (LOPA), independent protection layers (IPL), safety instrumented systems (SIS) and safety integrity level (SIL) and its determination; the functional safety lifecycle; the importance of facility siting, blast radius and impact zones; the passive and active protections in design, land use planning around industrial sites and fire zone planning; the fundamentals of mechanical integrity; the asset integrity and reliability and non-destructive testing techniques; and the corrosion monitoring and protection, inspection frequency and scheduling.

Course Objectives

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

- Complete Module 1 of the “Professional Process Safety Inspector” program is your successful road for this prestigious professional certification
- Define process safety and discuss the major industrial accidents and their impacts
- Explain the importance of process safety in the industrial setting and the basic terminologies and definitions
- Carryout process safety management (PSM), hazard identification, HAZOP and What-if analysis
- Employ risk assessment and risk matrix and its application
- Recognize the principles of layers of protection analysis (LOPA), independent protection layers (IPL), safety instrumented systems (SIS) and safety integrity level (SIL) and its determination
- Discuss functional safety lifecycle, the importance of facility siting, blast radius and impact zones
- Apply passive and active protections in design, land use planning around industrial sites and fire zone planning
- Discuss the fundamentals of mechanical integrity and apply asset integrity and reliability and non-destructive testing techniques
- Employ corrosion monitoring and protection, inspection frequency and scheduling

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, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of fundamentals of process safety for site inspectors, safety engineers, supervisors, newly appointed managers, junior managers, safety representatives and newly qualified health and safety advisors within the process industries.

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. 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-22

HTME No. 74851

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE1820	Professional Process Safety Inspector: Module 1: Fundamentals of Process Safety	October 02-06, 2022	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 Authorized 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 1-2013 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









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* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *

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.

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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.

Accommodation

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

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. Raymond Tegman is a **Senior HSE Consultant** with extensive experience within the **Oil & Gas, Petrochemical and Refinery** industries. His broad expertise widely covers in the areas of **Rigging Safety Rules, Machinery & Hydraulic Lifting Equipment, Handling Hazardous Chemicals, Spill Containment, Fire Protection, Fire Precautions, Incidents & Accidents Reporting, HSEQ Audits & Inspection, HSEQ Procedures, Environmental Awareness, Waste Management Monitoring, Emergency Planning, Emergency Management, Working at Heights, Root Cause Analysis, HSE Rules & Regulations, Professional Process Safety Inspector (PPSI), Process Safety Management (PSM), Process Hazard Analysis (PHA), Techniques, HAZOP, HSE Risk, Pre-Start-up Safety Reviews, HSE Risk Identification, Assessments & Audit, HSE Risk Assessment & Management Concepts, HSE Management Policy & Standards, HSSE Emergency Response & Crisis Management Operations, Confined Space Entry, Quantitative Risk Assessment (QRA), Hazardous Materials & Chemicals Handling, Safety Precaution & Response Action Plan, Hazard & Risk Assessment, Task Risk Assessment (TRA), Incident Command, Accident & Incident Investigation, Emergency Response Procedures, Job Safety Analysis (JSA), Behavioural Based Safety (BBS), Fall Protection, Work Permit & First Aid, Lock-out/Tag-out (LOTO), Emergency Response, Construction Supervision, Scaffolding Inspection, HAZCHEM, Manual Material Handling, Road Traffic Supervision, ISO 9001 and OHSAS 18001.**

During his career life, Mr. Tegman has gained his practical and field experience through his various significant positions and dedication as the **Operations Manager, Safety & Maintenance Manager, Safety Manager, Road/Traffic Supervisor, Assessor/Moderator, Safety Consultant, Safety Advisor, Safety Officer and Liaison Officer** from Zero Harm, SHRA Training & Services (Health & Safety), Road Crete, Balwin Property Development, DEME International, Gladstone Australia, Godavari Gas Pipeline and New Castle NCIG.

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.

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 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: Sunday, 04th of February 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0815 – 0930	What is Process Safety?
0930 – 0945	Break
0945 – 1030	Historical Perspective: Major Industrial Accidents & Their Impacts
1030 – 1130	Importance of Process Safety in the Industrial Setting
1130 – 1230	Basic Terminologies & Definitions
1230 – 1245	Break
1245 – 1315	Overview of Process Safety Management (PSM)
1315 – 1420	Case Study: Bhopal Gas Tragedy
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2: Monday, 05th of February 2024

0730 – 0930	Basics of Hazard Identification
0930 – 0945	Break
0945 – 1030	Tools for Hazard Identification: HAZOP, What-If Analysis
1030 – 1130	Introduction to Risk Assessment
1130 – 1230	Qualitative versus Quantitative Risk Assessment
1230 – 1245	Break
1245 – 1315	Risk Matrix & Its Application
1315 – 1420	Case Study: Piper Alpha Disaster
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3: Tuesday, 06th of February 2024

0730 – 0930	Principles of Layers of Protection Analysis (LOPA)
0930 – 0945	Break
0945 – 1030	Independent Protection Layers (IPL)
1030 – 1130	Introduction to Safety Instrumented Systems (SIS)
1130 – 1230	Safety Integrity Level (SIL) & Its Determination
1230 – 1245	Break
1245 – 1315	Functional Safety Lifecycle
1315 – 1420	Workshop: LOPA Exercise on a Given Process
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4: Wednesday, 07th of February 2024

0730 – 0930	Importance of Facility Siting
0930 – 0945	Break
0945 – 1030	Understanding Blast Radius & Impact Zones
1030 – 1130	Passive & Active Protections in Design
1130 – 1230	Land Use Planning Around Industrial Sites

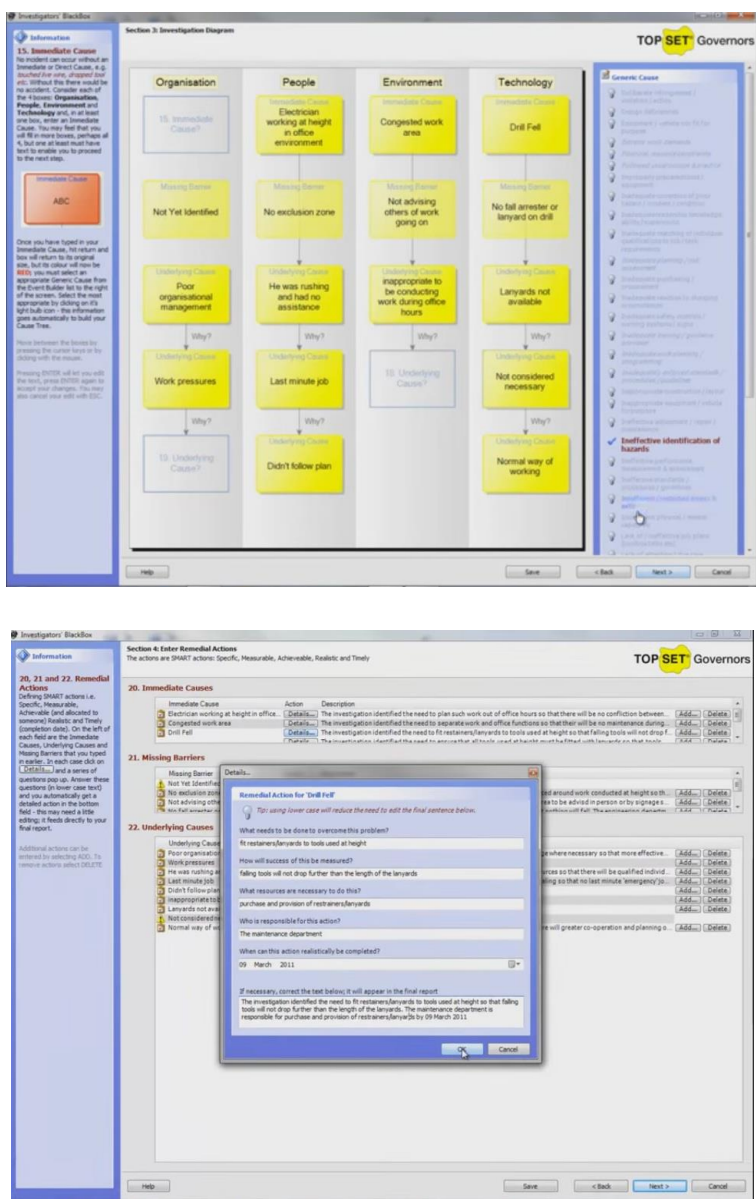
1230 – 1245	<i>Break</i>
1245 – 1315	<i>Fire Zone Planning</i>
1315 – 1420	<i>Case Study: Texas City Refinery Explosion</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 08th of February 2024

0730 – 0830	<i>Fundamentals of Mechanical Integrity</i>
0830 – 0930	<i>Asset Integrity & Reliability</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Non-Destructive Testing Techniques</i>
1030 – 1115	<i>Corrosion Monitoring & Protection</i>
1115 – 1200	<i>Inspection Frequency & Scheduling</i>
1200 – 1215	<i>Break</i>
1215 – 1300	<i>Workshop: Developing an Inspection Checklist</i>
1300 – 1315	<i>Course Conclusion</i>
1315 – 1415	<i>COMPETENCY EXAM - Module 1</i>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Simulators (Hands-on Practical Sessions)

Practical session 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 the simulator “BlackBox Simulator”; “CAMEO Chemicals Suite Simulator”, “Chemical Compatibility 1.1 Simulator” and “Chemical Safety Database Simulator”.



The image displays two screenshots of the BlackBox Software Tool interface, which is used for conducting investigations and defining remedial actions.

Section 3: Investigation Diagram

This screen shows a flowchart with four main categories: Organisation, People, Environment, and Technology. Each category contains several boxes representing causes and barriers. For example, under 'People', it lists 'Immediate Cause: Electrician working at height in office environment' and 'Missing Barrier: No exclusion zone'. The flowchart is interconnected with 'Why?' arrows, leading to 'Underlying Causes' such as 'Work pressures' and 'Didn't follow plan'.

Section 4: Enter Remedial Actions

This screen is used to define specific remedial actions for the identified causes. It includes a table with columns for 'Immediate Cause', 'Action', and 'Description'. A pop-up window titled 'Remedial Actions for "Drill Fall"' is shown, asking for details such as 'What needs to be done to overcome this problem?', 'How will success of this be measured?', and 'When can this action realistically be completed?'. The description in the table states: 'The investigation identified the need to fit restrainers/harneys to tools used at height so that falling tools will not drop further than the length of the lanyards. The maintenance department is responsible for purchase and provision of restrainers/harneys by 09 March 2011.'

BlackBox Software Tool



CAMEO Chemicals

Home
Help

Search Chemicals
New Search

MyChemicals
chemicals: 0
View MyChemicals
Predict Reactivity

Database of Hazardous Materials

Search
Find response information for thousands of hazardous materials, including fire and explosion hazards, health hazards, firefighting techniques, cleanup procedures, protective clothing, and chemical properties.

MyChemicals
Build a list of chemicals. For example, substances involved in an incident response (such as a train derailment) or chemicals stored in your community.

Reactivity
See what hazards might occur if chemicals in your MyChemicals collection are mixed together.

CAMEO Chemicals Suite Simulator

Boric Acid Compatibilities	
Acetal (Delrin®)	Excellent
Plastics	
Aluminum	Severe Effect
Metals	
Bronze	Good
Metals	
Buna N (Nitrile)	Excellent
Elastomers	
Carbon graphite	Excellent
Non-metals	
Carbon Steel	Severe Effect
Metal	
Carpenter 20	Good/2
Metals	
Cast iron	Severe Effect
Metals	
Ceramic Al2O3	Excellent
Non-metals	
Ceramic magnet	Excellent
Non-metals	
ChemRaz (FFKM)	Excellent
Plastic	
Copper	Good
Metals	
CPVC	Excellent
Plastics	
EPDM	Excellent
Elastomers	

Chemical Compatibility 1.1 Simulator



Chemical Safety Database Simulator

Course Coordinator

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