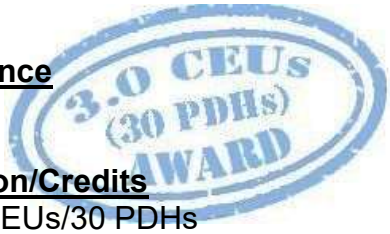
COURSE OVERVIEW HE0150
Safety Engineering & Risk Management

Course Title
Safety Engineering & Risk Management

Course Date/Venue
October 19-23, 2025/TBA Meeting Room, The H Hotel, Sheikh Zayed Road, Dubai, UAE



Course Reference
HE0150

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 provides understanding of the quantitative and qualitative analysis methods of safety engineering & risk management. The course also provides guidance in planning, implementing and managing an overall safety engineering program. It includes coverage of such applicable science and engineering principles as risk, human reliability, fault logic, failure modes, incident cost and prediction.

The course is presented in an applied format where several different types of industries are discussed such as Oil, gas, Chemical, Petrochemical, Power and manufacturing industries. Regulatory influence on system and process safety is discussed. Quantitative aspects of the course include application of risk analysis, fault tree analysis, process hazard and operability analysis (HAZOP), vapor-cloud dispersion modeling, human reliability analysis, failure modes and effects analysis, etc.

The course is also intended to provide a background in managing an overall safety program and its application to several industries, therefore, cost and effectiveness measurement are covered in the material.

Course Objectives

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

- Apply and gain a comprehensive knowledge on safety engineering and risk management
- Demonstrate the proper application of the appropriate science and engineering principles and quality applicable aspects of risk, human reliability, fault logic, failure modes, incident cost and incident prediction
- Employ the following system-safety analysis techniques and methods:
  - Hazard and Operability Study (HAZOP)
  - Fault Tree Analysis (FTA)
  - Risk Assessment and Analysis
  - Energy Trace and Barrier Analysis
  - Failure Modes and Effects Analysis (FMEA)
  - Other techniques to discuss including Technique for Human Error Rate Prediction (THERP)
- Explain the planning and management principles of a system safety program
- Determine what elements of a system safety program are critical to assessing the effectiveness of an overall program
- Employ safety conditions in the workplace and the need for formal written procedures
- Discuss the analysis of potentially dangerous conditions for risk management
- Identify hazardous chemicals and discuss confined spaces, excavations & elevated areas
- Describe the safety aspects of gases & pressure vessels and emergency procedures
- Discuss how the safety auditing system can gauge the company's safety status as well as technical reports and accident investigations to reduce future risks
- Develop an understanding on overall Management of Risk Process
- Apply a variety of techniques to determine and quantify potential risks & risk assessment and apply the Safety Life Cycle

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 conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of managing risk, reliability and loss prevention in production operations for all safety and reliability management specialists, managers, engineers and personnel responsible for the safety of the process plant. Further, the course is also beneficial for operators I and II in production operations.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

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 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:

Dr. John Petrus, PhD, MSc, BSc, is a **Senior HSE Consultant** with over **30 years** of **onshore & offshore** experience within the **Oil & Gas**, **Refinery** and **Petroleum** industries. His wide experience covers in the areas of **HAZOP & HAZID**, **HAZMAT & HAZCOM** Storage & Disposal, As Low as Reasonably Practicable (**ALARP**), Process Hazard Analysis (**PHA**), Process Safety Management (**PSM**), **Safety Engineering & Risk Management**, **Hazardous Materials & Chemicals** Handling, **Pollution Control**, **Environment, Health & Safety** Management, **Process Risk** Analysis, Effective Tool Box Talks, Construction Sites Safety, **HSSE Management** System, **HSSE Audit & Inspection**, **HSEQ Procedures**, **Authorized Gas** Testing, **Confined Space Entry & Rescue**, **Risk** Management, **Quantitative & Qualitative Risk** Assessment, **Working at Height**, **Firefighting** Techniques, **Fire** & **Gas** Detection System, **Fire Fighter & Fire** Rescue, **Fire Risk** Assessment, **HSE Industrial Practices**, **Manual Handling**, **Rigging Safety Rules**, **Machinery & Hydraulic Lifting Equipment**, **Warehouse Incidents & Accidents Reporting**, **Incident & Accident Investigation**, **Emergency Planning**, **Emergency Response & Crisis** Management Operations, **Waste Management** Monitoring, **Incident Command**, Job Safety Analysis (**JSA**), Behavioral Based Safety (**BBS**). Further he is also well versed in Materials for **Construction & Repair of Concrete**, **Concrete Structures & Building Rehabilitation**, **Reinforced Concrete Structures** Protection, **Building Construction** Technology, **Construction Operations & Civil Engineering** Services, **Building** Management, **Building Maintenance**, **Construction & Concrete** Works, **Construction** Management, **Construction** Materials & Testing, **Construction Safety**, **Predictive Maintenance** in Construction, **Construction & Facilities** Development, **Rotating Equipment** Selection, Operation, Maintenance, Inspection & Troubleshooting, **Rotating Machine/Equipment** in Industry, **Control Valves & Actuators**,**Data Analytics** for Managerial Decision Making, **Business Process Analysis**, Mapping & Modeling, **Research Methods & Analysis**, **Statistical Data Needs Analysis**, Oil & Gas Industry **Business Environment & Competitive Intelligence Gathering & Analysis**, Petroleum **Economics & Risk Analysis**, Certified **Data Analysis**.

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director**, **Senior Geoscience Advisor**, **Exploration Manager**, **Project Manager**, **Manager**, **HSE Engineer**, **Mechanical Engineer**, **Maintenance Engineer**, **Chief Geologist**, **Chief** of **Exploration**, **Chief** of **Geoscience**, **Senior Geosciences Engineer**, **Senior Explorationist**, **Senior Geologist**, **Geologist**, **Senior Geoscientist**, **Geomodeller**, **Geoscientist**, **CPR Editor**, **Resources Auditor**, **Project Leader**, **Technical Leader**, **Safety Supervisor**, **Team Leader**, **Senior HSE Consultant**, **Scientific Researcher** and **Senior Instructor/Trainer** from various international companies and universities such as the Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Standford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies, just to name a few.

Dr. Petrus has a **PhD** in **Geology** and **Tectonophysics** and **Master** and **Bachelor** degrees in **Earth Sciences** from the **Utrecht University**, **The Netherlands**. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars 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.

Accommodation

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

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.

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, 19th of October 2025

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 - 0830	***PRE-TEST***
0830 - 0900	***Introduction: Risk, Safety & Accidents***
0900 – 0930	***Video***
0930 – 0945	*Break*
0945 – 1015	***Process Safety Management (PSM) Standard***
1015 – 1100	***PSM Elements***
1100 - 1145	***Employee Participation***
1145 – 1230	***Chemical, Fire & Explosive Hazards***
1230 - 1245	*Break*
1245 – 1330	***System Safety Engineering***
1330 – 1420	***Case Study, Review & Exercises***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: Monday, 20th of October 2025

0730 – 0815	***Operating Procedures***
0815 – 0900	***Training***
0900 – 0915	***Contractors***
0915 – 0930	*Break*
0930 – 1015	***Pre-Start-up Safety Review***
1015 – 1100	***Mechanical Integrity***
1100 – 1145	***Video***

1145 – 1215	***Hot Work Permit***
1215 – 1230	*Break*
1230 – 1300	***Management of Change***
1300 – 1330	***Incident Investigation***
1330 – 1420	***Case Study, Review & Exercises***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 21st of October 2025

0730 – 0815	***Emergency Planning & Response***
0815 – 0900	***Compliance Audits***
0900 – 0930	***Trade Secrets***
0930 – 0945	*Break*
0945 – 1015	***Hazard Classification & Control***
1015 – 1100	***Video***
1100 – 1145	***System Safety Management***
1145 – 1230	***Risk Assessment Matrix***
1230 – 1245	*Break*
1245 – 1330	***Preliminary Risk Analysis***
1330 – 1420	***Case Study, Review & Exercises***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 22nd of October 2025

0730 – 0815	***What-if Analysis***
0815 – 0900	***Failure Modes and Effects Analysis (FMEA)***
0900 – 0930	***Fault Tree Analysis***
0930 – 0945	*Break*
0945 – 1030	***Hazard and Operability (HAZOP) Analysis***
1030 – 1130	***Video***
1130 – 1215	***Event Tree Analysis***
1215 – 1230	*Break*
1230 – 1330	***Pareto Analysis***
1330 – 1420	***Case Study, Review & Exercises***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 23rd of October 2025

0730 – 0930	***Checklist Analysis***
0930 - 0945	*Break*
0945 – 1100	***Change Analysis***
1100 – 1215	***Alternative Hazard Identification Methods***
1215 – 1230	*Break*
1230 – 1315	***Human Reliability Assessment (HRA)***
s1315– 1345	***Video***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator

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