

COURSE OVERVIEW HE0142(AD6)

Quantitative Risk Assessment (QRA) in Production Operations

Risk Assessment, Hazard Identification, Consequence & Frequency Analysis

Course Title

Quantitative Risk Assessment (QRA) in Production Operations: *Risk Assessment, Hazard Identification, Consequence & Frequency Analysis*

Course Date/Venue

August 18-22, 2025/Al Reem 1 Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference

HE0142(AD6)

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.



Quantitative Risk Assessment (QRA) is the process through which the risks associated with any system or process are assessed and managed. Risk is always associated with uncertainty and undesirability of certain states of the system of process of interest. QRA methods are used to identify the risk scenarios and estimate the corresponding probabilities.

QRA methods identify system vulnerabilities, and rank them according to their occurrence frequencies and severity of the consequences. In addition, uncertainties associated with the data and models used to quantify the levels of risk are identified and factored into measures of risk.



This course is designed to provide delegates with detailed and up-to-date overview of Quantitative Risk Assessment (QRA). It will cover quantitative risk assessment; hazard identification; consequences analysis including loss of containment calculation, explosion modelling, fire modelling and dispersion modelling; frequency analysis; and quantifying risk using of probit analysis.



Course Objectives

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

- Apply and gain an in-depth knowledge on quantitative risk assessment in production operations including consequence and frequency analysis
- Carryout proper methodology on risk assessment as well as the step-by-step approach
- Identify hazards and employ consequence and frequency analysis including loss of containment calculation, explosion modeling, fire modeling and dispersion modeling
- Apply quantifying risk by using systematic techniques including probit analysis

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 aspect and considerations of quantitative risk assessment in production operations for safety management staff, team leaders, engineers, supervisory roles and middle management. The course is essential for those managing the production operations in process plants and oil/gas fields.

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 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: -

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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**. 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.

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. Peter Christian is an **International Expert** in **Safety, Health, Environmental and Quality** with over **30 years** of practical and industrial experience in **NEBOSH International General Certificate in Occupational Health & Safety, Lifting & Rigging Equipment HAZOP, HAZWOPER, HAZMAT, HAZCOM, PHA (Process Hazard Analysis), FMEA, HAZID, ISO 14001, OHSAS 18001, ISO 9001, Process Safety Management (PSM), Safety, Health, Environmental & Quality Management (SHEQ), Behavioral Safety Management, Industrial Hygiene, Human Factors Engineering, Risk Assessment, QRA, Fire Fighting, Rope Rescue Operations, Emergency Response** within process industries. He is currently the **President of NKWE** and spearheads the companies major projects and business ventures, where he specializes in the areas of **SHEQ solutions, ISO, Quality Control and OSHA systems**. Previously, he has had much on-hand experience in the initiation and management of projects (technical as well organizational development) including involvement in **design of process plants; the commissioning & decommissioning of process plants; the operational and financial responsibility for large process operations; risk management; operational and maintenance management, crisis and emergency management, accident investigation, risk assessment, hazard identification and emergency preparedness & response** (oil spillage and gas explosions).

Much earlier in his career, Mr. Christian was a **HAZOP Team Leader** for numerous **HAZOP** studies and he has further managed the **Health, Safety & Environmental and Quality** requirements of a large process company. This included responsibilities as an auditor for compliance against **SHEQ standards, ISO standards and the Fatal Risk Control Protocols**. He then facilitated the development and implementation of the above standards as a group and at site level as part of the SHEQ council. Moreover, he established, trained and led a Rope rescue team and a high level emergency care clinic and ambulance service for many years. He still abseils recreationally and leads adventure groups during abseiling activities and serves as a rescue team member for mountain and water emergencies.

During his career life, Mr. Christian has gained his practical and field experience through his various significant positions as the **Plant Manager, Project Metallurgist, Metallurgist, HSE Team Leader, SHEC Superintendent, Mentor, Instructor/Trainer, Acting Technical Manager, Process Plant Superintendent, Acting Project Leader, Acting Plant Superintendent, Appointed Health & Safety & Environmental Superintendent, Production Technician, Acting Senior Shiftsman, Foreman and Learner – Official Extraction Metallurgy** from various companies such as the **NKWE Consulting, SAMANCOR, Middleburg Mine Services (Pty) Ltd., Koomfontein Mines, Emelo Mine Services, Gencor Group and South African Defence Force**.

Mr. Christian has a **Postgraduate Studies in Advanced Executive Programme** and a **National Higher Diploma (NHD) & a National Diploma in Extraction Metallurgy**. He is also a **Certified/Registered Tutor in NEBOSH International General Certificate, Certified Auditor in OHSAS 18001, ISO 14001 & ISO 9001, a Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer by the Institute of Leadership & Management (ILM), a Six Sigma Black Belt Coach** and holds a Certificate in Facilitate Learning Using a Variety of Given Methodologies **NQF Level 5 (EDTP-SETA)** as a **Certified Facilitator**. He has further delivered innumerable courses, trainings, workshops and conferences globally.

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: Monday, 18th of August 2025

0730 - 0745	Registration & Coffee
0745 - 0800	Welcome & Introduction
0800 - 0830	PRE-TEST
0830 - 0930	Quantitative Risk Assessment
0930 - 0945	Break
0945 - 1100	Quantitative Risk Assessment (cont'd)
1100 - 1230	Hazard Identification
1230 - 1245	Break
1245 - 1420	Hazard Identification (cont'd)
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2: Tuesday, 19th of August 2025

0730 - 0930	Consequences Analysis Loss of Containment Calculation
0930 - 0945	Break
0945 - 1100	Consequences Analysis (cont'd) Loss of Containment Calculation (cont'd)
1100 - 1230	Consequences Analysis (cont'd) Explosion Modelling
1230 - 1245	Break
1245 - 1420	Consequences Analysis (cont'd) Explosion Modelling (cont'd)
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3: Wednesday, 20th of August 2025

0730 - 0930	Consequences Analysis (cont'd) Fire Modelling
0930 - 0945	Break
0945 - 1100	Consequences Analysis (cont'd) Fire Modelling (cont'd)
1100 - 1230	Consequences Analysis (cont'd) Dispersion Modelling
1230 - 1245	Break
1245 - 1420	Consequences Analysis (cont'd) Dispersion Modelling (cont'd)
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday, 21st of August 2025

0730 - 0930	Frequency Analysis
0930 - 0945	Break
0945 - 1100	Frequency Analysis (cont'd)

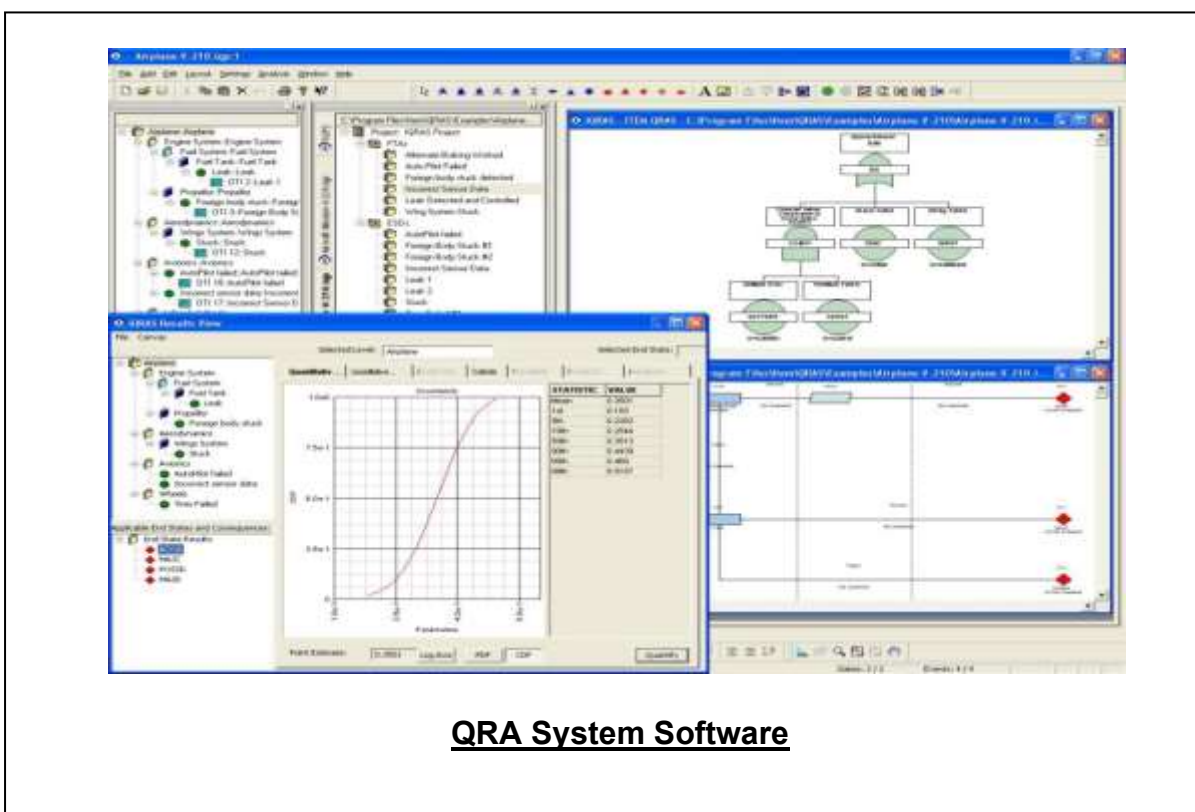
1100 – 1230	Frequency Analysis (cont'd)
1230 - 1245	Break
1245 - 1420	Frequency Analysis (cont'd)
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5: Friday, 22nd of August 2025

0730 - 0930	Quantifying Risk Using of Probit Analysis
0930 - 0945	Break
0945 - 1100	Quantifying Risk (cont'd) Using of Probit Analysis (cont'd)
1100 – 1230	Quantifying Risk (cont'd) Using of Probit Analysis (cont'd)
1230 - 1245	Break
1245 - 1345	Quantifying Risk (cont'd) Using of Probit Analysis (cont'd)
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

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 simulators “QRA System Software” and “CAMEO Chemicals Suite Software”.



QRA System Software



CAMEO Chemicals Suite Software

Course Coordinator

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