COURSE OVERVIEW HE0142(AD6)
Quantitative Risk Assessment

Course Title
Quantitative Risk Assessment

Course Date/Venue
December 15-19, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, 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, 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 managing risk, reliability and loss prevention in production operations for all design, safety and reliability managers, engineers and those in-charge of risk, reliability, loss prevention and safe of process plants and production facilities.

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.

Accommodation

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

Course Certificate(s)
Internationally recognized certificates will be issued to all participants of the course.

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.

- 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.

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. Pete Du Plessis is a **Senior Engineer & Management Consultant** with over **35 years** of extensive experience within **Oil**, **Gas** and **Petrochemical** industries. His expertise includes **Creative Thinking & Problem-Solving** Techniques, **Change** Management, **Negotiation** Skills, **Presentation** Skills, **Communication & Influencing** Skills, **Communication & Interpersonal** Skills, **Emotional Intelligence**, Effective **Business Writing Skills**, **Leadership** Skills, **Leadership & Team Building**, **Interpersonal Skills & Teambuilding**, **Coaching & Mentoring**, **Innovation & Creativity** Skills, **Office Management & Administration** Skills, **Time & Stress** Management, **Crisis** Management, **Human Resources** Management, **Customer Service** Excellence, Essential Skills for **Effective Training**, Training & Designing a **Training Plan**, Identifying **Training Needs & Evaluating Training**, Executive **Coaching**, **Mentoring & Team Building**, **Coaching & Counselling**, **Commercial Negotiation** Skills, **Contract** Management, **Contract Negotiation**, **Risk** Management & **Contractors Selection**, **Supplier** Assessment, **Supplier** & **Contractors'** Management, **Supplier Claim** Management, **Effective Tendering** & **Supplier** Selection, **Supplier Relationship** Management and **Suppliers & Contractors** Management. Further, he is also well-versed in **Modern Maintenance** Management, **Lubrication**, **Root Cause Analysis**, **Maintenance Management**, **Maintenance Planning**, **Shutdown & Turnaround**, **Mechanical Troubleshooting**, **Preventive & Predictive Maintenance**, **Condition Monitoring**, **Start-up & Commissioning**, **Process Plant Commissioning**, **Cost Estimation**, **Dynamic Hydraulic Testing**, **COSHH**, **P&ID Reading**, **Engineering Drawings**, **Piping & Instrumentation Diagrams**, **Isometrics Drafting**, **Control & Safety Systems**, **PFD**, **Environmental Management** (**ISO 14001**), **Safety Management** (**OHSAS 18001**) and **Quality Management** (**ISO 9001**).His wide experience also includes **Process Safety**, **Process Troubleshooting & Problem Solving**, **Process Hazard Analysis** (**PHA**), **Process Safety Management**, **Risk Assessment** within Production Operation, **Hazard Identification**, **Safety Auditing**, **Site Inspection**, **Quantified Risk Assessment**, **HAZOP Studies & Leadership**, **FMEA**, Waste Management, Industrial Effluents, **Hazardous Material**, Chemical Handling, Emergency Response Services, **HAZCOM**, **HAZWOPER** and **HAZMAT**.

While Mr. Du Plessis has been very active in the process industry he has likewise headed Consultancy projects for major **petrochemical companies**. In all his projects, he utilizes a systems approach which includes **risk management**, **process safety**, health & environmental management, human behaviour and quality management. Furthermore, he has come to share his expertise through the **numerous international trainings** he has held on **PHA**, **HAZOP**, **Risk Assessment**, Handling **Hazardous Materials** & Chemicals, Petroleum Products Handling & Transportation. Moreover, he completed various assignments as a consultant, trainer, facilitator, auditor & designer and conducted numerous licensed international Safety, Technology and Auditing Awareness & Implementing training courses including **IMS**, **ISO 9001**, **ISO 14001**, **ISO 27001**, **ISO 17799**, **OHSAS 18001** audits & assessments. With his accomplishments and achievements, he had been a **Safety Superintendent**, **Senior Safety Official** and **Senior Process Controller** for several international petrochemical companies.

Mr. Plessis has a **Bachelor** degree with **Honours** in **Industrial Engineering** & **Management**. Further, he has gained **Diploma** in **Quality & Production Management**. He is also a **Certified Assessor** & **Moderator** with the Manufacturing, Engineering & Related Services Education and Training Authority (MERSETA), a **Certified Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and a **Certified Instructor/Trainer**.

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, 15th December 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Quantitative Risk Assessment***
0930 – 0945	*Break*
0945 – 1100	***Quantitative Risk Assessment (cont'd)***
1100 – 1215	***Hazard Identification***
1215 – 1230	*Break*
1230 – 1420	***Hazard Identification (cont'd)***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 16th December 2024***

0730 – 0930	***Consequences Analysis*** *Loss of Containment Calculation*
0930 – 0945	*Break*
0945 – 1100	***Consequences Analysis (cont'd)*** *Loss of Containment Calculation (cont'd)*
1100 – 1215	***Consequences Analysis (cont'd)*** *Explosion Modelling*
1215 – 1230	*Break*
1230 – 1420	***Consequences Analysis (cont'd)*** *Explosion Modelling (cont'd)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Tuesday, 17th December 2024***

0730 – 0930	***Consequences Analysis (cont'd)*** *Fire Modelling*
0930 – 0945	*Break*
0945 – 1100	***Consequences Analysis (cont'd)*** *Fire Modelling (cont'd)*

1100 – 1215	***Consequences Analysis (cont'd)*** *Dispersion Modelling*
1215 – 1230	*Break*
1230 – 1420	***Consequences Analysis (cont'd)*** *Dispersion Modelling (cont'd)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: ***Wednesday, 18th December 2024***

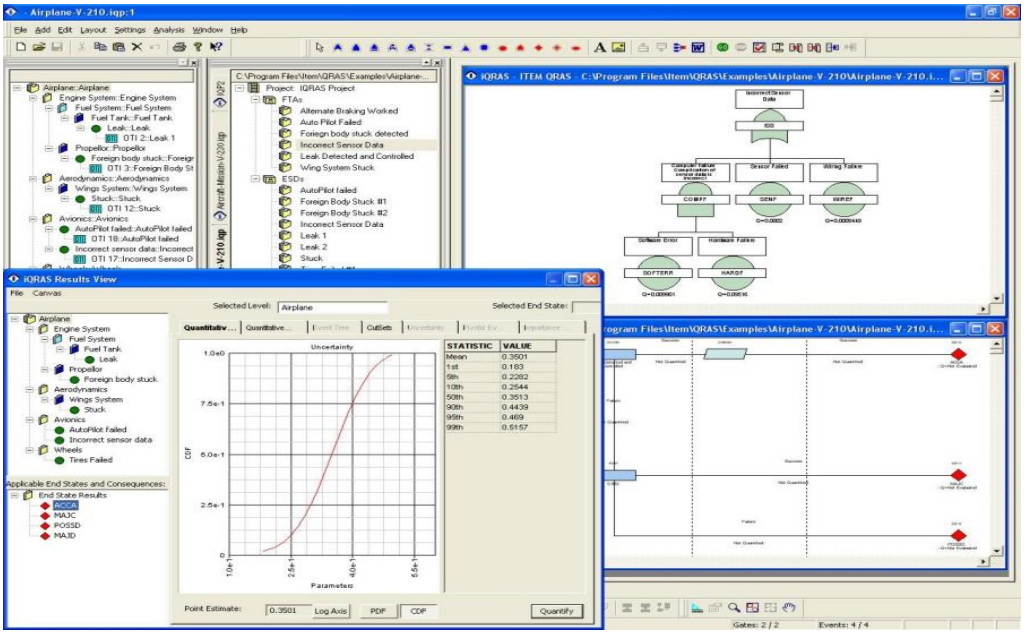
0730 – 0930	***Frequency Analysis***
0930 – 0945	*Break*
0945 – 1100	***Frequency Analysis (cont'd)***
1100 – 1215	***Frequency Analysis (cont'd)***
1215 – 1230	*Break*
1230 – 1420	***Frequency Analysis (cont'd)***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: ***Thursday, 19th December 2024***

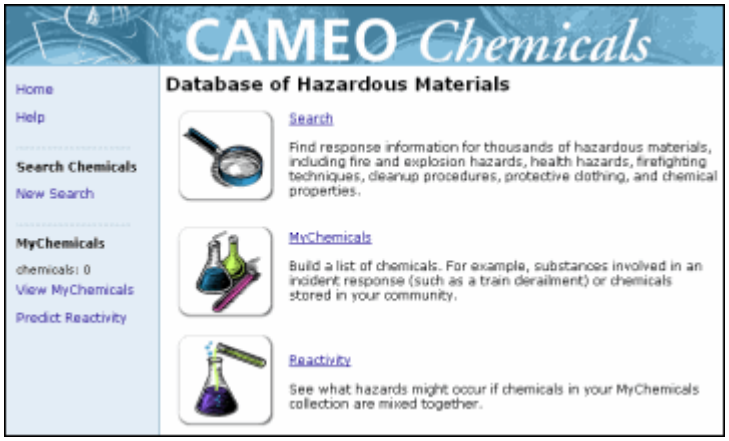
0730 – 0930	***Quantifying Risk*** *Using of Probit Analysis*
0930 – 0945	*Break*
0945 – 1100	***Quantifying Risk (cont'd)*** *Using of Probit Analysis (cont'd)*
1100 – 1215	***Quantifying Risk (cont'd)*** *Using of Probit Analysis (cont'd)*
1215 – 1230	*Break*
1230 – 1345	***Quantifying Risk (cont'd)*** *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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