COURSE OVERVIEW IE0880

Alarm Management

Course Title
Alarm Management

Course Date/Venue
June 28-July 02, 2026/TBA Meeting Room, Al Bandar Rotana Creek, Dubai, UAE

Course Reference
IE0880

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 is designed to provide participants a detailed and up-to-date overview of alarm management for process safety. It covers the importance of measuring alarm system performance; the case studies of major incidents; and the human factors associated with alarm management specifically in terms of operator performance.

During this interactive course, participants will learn how alarm management applies to stand-alone process instruments including DCS and SCADA systems; the importance of measuring alarm system performance; the case studies of major incidents; the human factors associated with alarm management specifically in terms of operator performance; the alarm management methods including analysis techniques; the basis of intelligent alarm management with the latest software systems; the Safety Instrumented Systems (SIS); and the alarm systems and effective changes.

Course Objectives

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

- Apply systematic methodological techniques and procedures in alarm management systems including alarm types and applicable standards
- Identify how alarm management applies to stand-alone process instruments including DCS and SCADA systems
- Appreciate the importance of measuring alarm system performance
- Evaluate case studies of major incidents
- Recognize the human factors associated with alarm management specifically in terms of operator performance
- Carryout the alarm management methods including analysis techniques
- Review the basis of intelligent alarm management with the latest software systems
- Gain a working knowledge on Safety Instrumented Systems (SIS)
- Optimize alarm systems and implement effective changes

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 for all significant aspects and considerations of alarm management for process safety for process control engineers and supervisors, instrument and control system engineers, plant operation personnel, automation and application engineers, process engineers and supervisors, safety engineers and those involved in the design, implementation, up-grading and security of industrial control systems.

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: -

- 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:

Mr. Barry Pretorius is a **Senior Instrumentation Engineer** with almost **30** years of extensive experience within the **Oil**, **Gas**, **Petrochemical**, **Refinery** & **Power** industries. His expertise widely covers in the areas of **Cyber Security** Practitioner, **Cyber Security** of Industrial Control System, **IT Cyber Security** Best Practices, **Cybersecurity** Fundamentals, **Ethical Hacking & Penetration Testing**, **Cybersecurity** Risk Management, **Cybersecurity** Threat Intelligence, **OT Whitelisting** for Better Industrial Control System Defense, **NESA** Standard and Compliance Workshop, **OT**, **Cyber Attacks** Awareness - Malware/Ransom Ware / Virus /Trojan/ Philsing, **Information Security Manager**, **Security System** Installation and Maintenance, Security of Distributed Control System (**DCS**), Process Control, Instrumentation, Safeguarding & Security, Programmable Logic Controller (**PLC**), **Siemens PLC** Simatic S7-400/S7-300/S7-200, **PLC & SCADA** for Automation & Process Control, **Artificial Intelligence**, **Allen Bradley PLC** Programing and Hardware Trouble Shooting, Schneider **SCADA System**, **Wonder Ware**, **Emerson**, **Honeywell**, **Honeywell** Safety Manager PLC, **Yokogawa**, Advanced **DCS Yokogawa**, **Endress & Hauser**, Field Commissioning and Start up Testing Pre Operations, System Factory Acceptance Test (**FAT**), System Site Acceptance Test (**SAT**), **SCADA HMI & PLC** Control Logic, Implementation, Systems Testing, Commissioning and Startup, **Foxboro DCS & Triconics, SIS** Systems, **Drives**, Motion Control, **Hydraulics**, **Pneumatics and Control Systems** Engineering, **Electrical & Automation Control Systems**, **HV/MV Switchgear, LV & MV** Switchgears & Circuit Breakers, **High Voltage Electrical Safety**, **LV & HV Electrical System**, **HV Equipment** Inspection & Maintenance, **LV Distribution Switchgear & Equipment**, **Electrical Safety**, **Electrical** Maintenance, **Transformers**, **Medium & High Voltage Equipment**, **Circuit Breakers**, **Cable & Overhead Line** Troubleshooting & Maintenance, **Electrical Drawing & Schematics**, **Voltage Distribution**, **Power Distribution**, **Filters**, **Automation System**, **Electrical Variable Speed Drives**, **Power** Systems, **Power Generation**, **Diesel Generators**, **Power Stations**, Uninterruptible Power Systems (**UPS**), **Battery Chargers**, **AC & DC Transmission**, **CCTV** Installation, **Data & Fire Alarm** System, **Evacuation** Systems and **Electrical Motors & Variable Speed Drives**, & Control of Electrical and Electronic devices.

During Mr. Pretorius's career life, he has gained his practical experience through several significant positions and dedication as the **Senior Technical Analyst, Team Leader, Pre-operations Startup Engineer, Automation System's Software Manager, Automation System's Senior Project Engineer, PLC Specialist, Site Manager, Senior Project & Commissioning Engineer, Technical Director, Project Engineer, Radio Technician**, **A T E Technician** and **Senior Instructor/Trainer** from various companies like the ADNOC Sour Gas, Ras Al Khair Aluminum Smelter, Johnson Matthey Pty. Ltd, Craigcor Engineering, Unitronics South Africa Pty (Ltd), Bridgestone/Firestone South Africa Pty (Ltd) and South African Defense Force.

Mr. Pretorius's has a Higher Diploma in **Electrical Engineering Heavy Current**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, courses, workshops, seminars and conferences internationally.

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, 28th of June 2026***

0730 – 0745	*Registration & Coffee*
0745 – 0800	*Welcome & Introduction*
0800 – 0815	***PRE-TEST***
0815 – 0845	***Review of Seminar*** *Objectives of Seminar ● Timetables*
0845 – 0930	***Introduction*** *General ● Objectives ● Current Problems ● Case Study*
0930 – 0945	*Break*
0945 – 1030	***Alarm Types*** *General ● Process Alarms ● Equipment Alarms ● Alarm Modes ● Conclusions*
1030 – 1130	***Alarm Standards*** *Introduction ● EEMUA 191 ● ISA S18.02 ● NUREG 0700 ● NFPA 85 ● NAMUR NA 102 ● IEC 61511*
1130 – 1200	***Video Presentation*** *HAZOP*
1200 – 1215	*Break*
1215 – 1315	***History of Alarm Issues*** *Introduction ● Background ● Influences on an Alarm System ● Bad Actors ● Conclusions*
1315 – 1420	***Strategies for Alarm Management*** *What Should be an Alarm? ● Alarm Management Crisis ● Business Considerations ● Role of the Operator ● Alarm Behaviour & Effectiveness*
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, 29th of June 2026***

0730 – 0900	***Alarms & Distributed Control Systems*** *Abnormal Situation Management ● Full Rationalisation ● Master Alarm Database ● Human Machine Interface ● Model Based Alarming ● Alarm Testing ● Alarm Suppression Technology ● Need for Progress ● Advantage of Shutdowns*

0900 – 0915	Break
0915 – 1100	***Alarm System Performance*** *Introduction ● EEMUA 191 References ● Alarm System Measurements ● Alarm System Performance Levels ● Appropriate Performance ● Conclusions ● Bibliography*
1100 – 1230	***Alarms in Process Control Instruments*** *Single Loop Systems ● Hard Alarms ● Soft Alarms ● Limit Alarm Functions ● Voting System*
1230 – 1245	Break
1245 – 1400	***Case Studies*** *Bhopal Gas Tragedy ● Piper Alpha Disaster ● Chernobyl Catastrophe ● Buncefield Oil Depot Explosion ● Milford Haven Refinery Fire*
1400 – 1420	***Video Presentation*** *BP Texas City Explosion*
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, 30th of June 2026

0730 – 0900	***Annunciators*** *Introduction ● Review ● Basic Concepts of Alarm Annunciators ● Alarm Annunciators in Safety Systems ● Conclusions*
0900 – 0915	Break
0915 – 1030	***Alarm Management for Pipelines*** *Background ● SCADA Perspective ● Differences Between Oil & Gas Pipelines ● Key Performance Indicators ● Operations ● Review Practice*
1030 – 1100	***Video Presentation*** *HART Digital Communications*
1100 – 1115	Break
1115 – 1300	***Operator Considerations*** *Graphics ● Alarm Hierarchies ● Asset Management ● Speed of Response ● Up-Date Times ● Practical Examples*
1300 – 1420	***DMAIC Methodology*** *Define ● Measure ● Analyse ● Improve ● Control ● Workflow Examples ● Continuous Application*
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, 01st of July 2026

0730 – 0900	***Root Cause Analysis*** *Human Factors ● Design Issues ● Legacy Problems ● Benchmarking ● Alarm Overload ● Sequence of Events*
0900 – 0930	***Video Presentation*** *Back to Basics*
0930 – 0945	Break

0945 – 1100	***Intelligent Alarm Management*** *Incident Forensics ● Bad Actor Removal ● Rationalisation & Detail Design ● Mangement of Change ● Benchmark Alarm Performance ● Automated Alert System*
1100 – 1230	***Alarm Management Software*** *Typical System*
1230 – 1300	***Video Presentation*** *Tips Alarm Management Demonstration*
1300 – 1315	*Break*
1315 – 1420	***Safety Instrumented Systems*** *Introduction ● Overview ● Ensuring Safety ● Layers of Safety ● Factors Affecting Safety ● Anatomy of a Disaster ● Disaster Prevention*
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, 02nd of July 2026***

0730 – 0900	***Alarm System Optimisation*** *Establishing a Reliable System ● Considerations ● Conclusions*
0900 – 0915	*Break*
0915 – 1100	***Practical Alarm Management*** *Ineffective Alarm Systems ● Typical Problems ● Alarm System Survey Analysis ● HSE Recommendations ● Seven Steps to Alarm Management ● Thoughts for the Future ● Conclusions*
1100 – 1230	***Alarm Management Implementation*** *Introduction ● Objectives ● Benefits ● Installation of Enterprise Alarm & Event Historian*
1230 – 1245	*Break*
1245 – 1345	***Alarm Management Implementation (cont'd)*** *Creation of Alarm Philosophy ● Top 20 Review ● Documentation & Operator Assist ● Management of Change ● Dynamic Alarming ● Conclusions*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
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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