COURSE OVERVIEW IE1115
Introduction to Oil & Gas Security Systems

Course Title
Introduction to Oil & Gas Security Systems

Course Reference
IE1115

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Date/Venue

Session(s)	Date	Venue
1	July 20-24, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
2	September 14-18, 2025	Safir Meeting Room, Divan Istanbul, Taksim, Turkey
3	November 02-06, 2025	Olivine Meeting Room, Fairmont Nile City, Cairo, Egypt

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using one of our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of Introduction to Oil & Gas Security Systems. It covers the security threats in oil and gas operations and roles and responsibilities in security hierarchy; the types of security systems, site security design, zoning, security standards and regulatory compliance, security culture and reporting protocols; the camera types, applications and surveillance system architecture; the installation and cabling for CCTV, maintenance and troubleshooting, video analytics and monitoring; and the data privacy and retention policies.

During this interactive course, participants will learn the access control system components, identification technologies and intrusion detection systems; the alarm management, access policy management and system maintenance and health; the security and SCADA integration and power systems for security and networking fundamentals; the surge and lightning protection, redundancy and fail-safe design and networking security measures; and the emergency response and security drills, routine maintenance planning and incident response workflow.

Course Objectives

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

- Apply and gain a basic knowledge on oil and gas security systems
- Discuss the security threats in oil and gas operations and roles and responsibilities in security hierarchy
- Recognize types of security systems and apply site security design, zoning, security standards and regulatory compliance, security culture and reporting protocols
- Identify camera types and applications and surveillance system architecture
- Carryout installation and cabling for CCTV, maintenance and troubleshooting, video analytics and monitoring and data privacy and retention policies
- Describe access control system components, identification technologies and intrusion detection systems
- Apply alarm management, access policy management and system maintenance and health checks
- Employ security and SCADA integration and discuss power systems for security and networking fundamentals
- Carryout surge and lightning protection, redundancy and fail-safe design and networking security measures
- Implement emergency response and security drills, routine maintenance planning and incident response workflow

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 aspects and considerations of oil and gas security systems for security professionals, health, safety, and environment (HSE) staff, facility and operations managers, IT and OT (operational technology) specialists, risk management and compliance officers, emergency response teams and other technical staff.

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

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**. 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. Sydney Thoresson, PE, BSc, is a **Senior Electrical & Instrumentation Engineer** with over **40 years** of extensive experience within the **Power & Water Utilities** and Other **Energy Sectors**. His specialization highly evolves in **Electrical Safety**, **Power System Equipment**, **Electrical Drawing**, **Electrical Forecasting**, **Transmission Networks**, **Substation**, **Distribution Networks**, **Substation Automation Systems & Application**, **Electrical** System, **HV/LV Electrical** Authorisation, **Variable Frequency Drives** (VFD), **HV/LV Equipment**, **Circuit Breaker**, **Motor Controllers**, **Hazardous Area Classification**, **Intrinsic Safety**, **Electrical Power Systems** Quality & Troubleshooting, **Protection & Relay**, **Electric & Control** System Commissioning, **Liquid & Gas Flowmetering**, Fault Analysis in **Electrical Networks & Distribution Cables**, **Custody Measurement**, **Ultrasonic Flowmetering**, **Loss Control**, **Gas Measurement**, **Process Control Instrumentation**, **Compressor Control & Protection**, **Control Systems**, Programmable Logic Controllers (**PLC**), **SCADA**, Distributed Control Systems (**DCS**) especially in **Honeywell DCS**, **H&B DCS**, **Modicon, Siemens**, **Telemecanique**, **Wonderware** and **Adrioit**. Moreover, he has vast experience in the field of Safety Instrumented Systems (**SIS**), Safety Integrity Level (**SIL**), Emergency Shutdown (**ESD**), **Flowmetering & Custody Measurement**, **Multiphase Flowmetering**, **Measurement and Control**, **Mass Measuring System Batching** (**Philips**), Arc Furnace Automation-Ferro Alloys, Walking Beam Furnace, Blast Furnace, Billet Casting Station, Cement Kiln Automation, Factory Automation and Quality Assurance Accreditation (**ISO 9000** and **Standard BS 5750**).

During Mr. Thoresson's career life, he has gained his thorough and practical experience through various challenging positions such as a **Project Manager**, **Contracts Manager**, **Managing Director**, **Technical Director**, **Divisional Manager**, **Plant Automation Engineer**, **Senior Consulting Engineer**, **Senior Systems Engineer**, **Consulting Engineer**, **Service Engineer** and **Section Leader** from several international companies such as **Philips**, **FEDMIS**, **AEG**, **DAVY International**, **BOSCH** Instrumentation and Control, **Billiton**, **Endress/Hauser**, **Petronet**, **Iscor**, **Spoornet**, **Eskom** and **Afrox**.

Mr. Thoresson is a **Registered Professional Engineering Technologist** and has a **National Higher Diploma** (**NHD**) & a **National Diploma** in **Radio Engineering** from the **Witwatersrand Technikon**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), an active member of the International Society of Automation (**ISA**) and the Society for Automation, Instrumentation, Measurement and Control (**SAIMC**).

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

Dubai	**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.
Cairo	**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.
Istanbul	**US$ 6,000** 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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Security Threats in Oil & Gas Operations*** *Threats: Vandalism, Terrorism, Theft, Cyber-Physical Attacks • Differences Between Onshore and Offshore Risks • Insider Threats and Third-Party Risks • Risk Assessment Methods (Qualitative vs Quantitative)*
0930 – 0945	*Break*
0945 – 1030	***Roles & Responsibilities in Security Hierarchy*** *Security Personnel Roles and Competencies • Chain of Command and Escalation Matrix • Coordination with Local Authorities and Emergency Teams • Ethics and Legal Considerations in Security Management*
1030 – 1130	***Types of Security Systems*** *Physical Barriers: Fencing, Gates, Turnstiles • Electronic Systems: Surveillance, Alarms, Access Control • Environmental Sensors: Gas Detectors, Temperature, Vibration • Integrated Control Rooms and Command Centers*
1130 – 1215	***Site Security Design & Zoning***

	Security Zoning: Controlled, Restricted, and Sensitive Zones • Perimeter Security and Intrusion Buffer Zones • Vehicle Access and Parking Control • Guard Post Placement and Surveillance Coverage
1215 – 1230	*Break*
1230 – 1330	***Security Standards & Regulatory Compliance*** *API, OSHA, ATEX, ISO 28000 • Best Practices in Hazardous Area Classifications • Legal Mandates for Security System Documentation • Internal Audits and Third-Party Inspections*
1330 – 1420	***Security Culture & Reporting Protocols*** *Building a Security-Aware Workforce • Reporting Suspicious Activities • Use of Checklists and Logbooks • Coordination with HSE and Operations Teams*
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

0730 – 0830	***Camera Types & Applications*** *Fixed, PTZ, Thermal, IR, and Explosion-Proof Cameras • Camera Placement Strategy: Field vs Control Room • Indoor vs Outdoor Camera Considerations • Intrinsically Safe Designs for Hazardous Zones*
0830 – 0930	***Surveillance System Architecture*** *DVR vs NVR Comparison • Hybrid Systems and Cloud Storage Options • Bandwidth Considerations in Video Streaming • Redundant Video Paths and Failover Options*
0930 – 0945	*Break*
0945 – 1100	***Installation & Cabling for CCTV*** *Mounting Considerations and Vibration Isolation • Use of Armoring and Conduits • Network vs Coaxial vs Fiber Optic Cabling • Grounding and Shielding Requirements*
1100 – 1215	***Maintenance & Troubleshooting*** *Lens Cleaning and Fog Prevention • Video Loss Diagnostics and Cable Testing • Firmware Updates and Patching • Preventive vs Reactive CCTV Maintenance*
1215 – 1230	*Break*
1230 – 1330	***Video Analytics & Monitoring*** *Motion Detection and Auto-Tracking • Facial Recognition and Object Classification • Integration with Access Control and Alarms • Real-Time Alerts and Automated Escalation*
1330 – 1420	***Data Privacy & Retention Policies*** *Legal Limitations on Video Storage Duration • Access Control to Recorded Footage • Tamper-Proof Storage Systems • Data Encryption and Backup Protocols*
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

0730 – 0830	***Access Control System Components*** *Controllers, Readers, Door Locks • Centralized vs Decentralized Access Architecture • Integration with Time Attendance Systems • Server and Backup System Configuration*
0830 – 0930	***Identification Technologies*** *RFID and Smart Card Systems • Fingerprint and Iris Recognition • Two-Factor and Multi-Factor Authentication • Visitor Badge and Contractor Pass Management*
0930 – 0945	*Break*
0945 – 1100	***Intrusion Detection Systems*** *Sensor Types: Passive Infrared, Glass Break, Microwave • Zone Mapping and Sensor Layout • Environmental Interference: Heat, Moisture, Wildlife • Tamper Protection and Signal Verification*
1100 – 1215	***Alarm Management*** *Types of Alarms: Silent, Audible, Visual • Alarm Routing and Priority Settings • Central Monitoring Systems and Operator Dashboards • Alarm Fatigue and False Positive Management*
1215 – 1230	*Break*
1230 – 1330	***Access Policy Management*** *Role-Based Access Control (RBAC) • Shift-Based Access Schedules • Emergency Override and Lockdown Features • Incident Logging and Analytics*
1330 – 1420	***System Maintenance & Health Checks*** *Battery and Power Supply Testing • Reader Alignment and Responsiveness • System Diagnostics Tools • Scheduled Servicing and Software Upgrades*
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

0730 – 0830	***Security & SCADA Integration*** *Linking CCTV and ACS to SCADA/HMI • Event-Based Triggers and Alarm Escalation • Data Exchange Protocols (Modbus, OPC, SNMP) • Cybersecurity Considerations in Integrated Systems*
0830 – 0930	***Power Systems for Security*** *Power Over Ethernet (PoE) Fundamentals • UPS for Critical Loads • Solar and Hybrid Backup for Remote Areas • Load Prioritization and Battery Banks*
0930 – 0945	*Break*
0945 – 1100	***Networking Fundamentals*** *IP Addressing and Subnet Planning • VLAN Setup for Security Systems • Switches, Routers, and Network Segregation • Remote Access and Security Gateways*
1100 – 1215	***Surge & Lightning Protection*** *Grounding Grids and Bonding Techniques • Surge Protective Devices (SPD) Types and Placement • Hazardous Zone Compliance in Grounding • Case Studies: Lightning-Related Failures*
1215 – 1230	*Break*

1230 – 1330	***Redundancy & Fail-Safe Design*** *Hot Standby and Cold Standby Options • Redundant Cabling and Dual Feeds • Backup Storage and Server Mirroring • Fail-Open vs Fail-Closed Configurations*
1330 – 1420	***Networking Security Measures*** *Firewalls and Intrusion Detection/Prevention • Encryption Protocols (TLS, SSL) • User Access Management and Audit Trails • Network Traffic Monitoring and Alerts*
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

0730 – 0830	***Emergency Response & Security Drills*** *Scenario-Based Training: Fire, Theft, Intrusion • Evacuation Plan Integration with ACS • Tabletop Exercises and Live Drills • Role of Security Systems in Emergency Response*
0830 – 0930	***Routine Maintenance Planning*** *Developing Annual Maintenance Schedules • Vendor Contract Management • Spare Parts Inventory Planning • Maintenance Logs and Documentation*
0930 – 0945	*Break*
0945 – 1100	***Incident Response Workflow*** *Incident Identification and Classification • Root Cause Analysis and Evidence Collection • Incident Reporting Formats and Compliance Logs • Corrective Action Tracking*
1100 – 1215	***Hands-On Simulation Exercise*** *Fault Detection on ACS/CCTV Systems • Troubleshooting Simulated Network Failure • Alarm Response and Reset Drills • Role-Based Responsibilities During Incidents*
1215 – 1230	*Break*
1230 – 1345	***Case Studies & Industry Best Practices*** *Review of Real-World Incidents and Lessons Learned • Benchmarking Security System Effectiveness • Cost-Benefit Analysis of Security Upgrades • International Examples in Oil & Gas Security*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (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 one of our state-of-the-art simulators “NVR 8 Channel with PoE - HikVision”, “PTZ Dome CCTV Camera Mini 2MP”, “Dome CCTV Camera VeryFocal 4MP”, “Bullet CCTV Camera 4MP”, Video Surveillance Hard Disk 1TB”, “Monitor”, “Network Tools”, “Cat6 Cables”,“RJ45” and “HMI SCADA”.

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NVR 8 Channel with PoE - HikVision

PTZ Dome CCTV Camera Mini 2MP

Dome CCTV Camera VeryFocal 4 MP

Bullet CCTV Camera 4MP

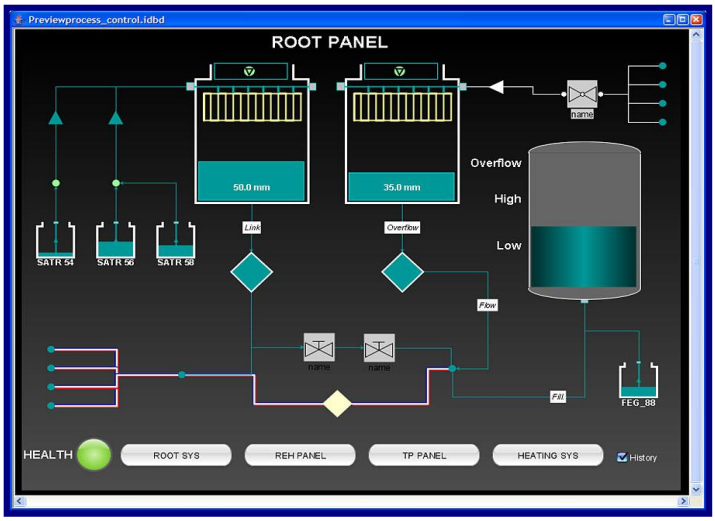
Video Surveillance Hard Disk 1TB

Monitor

Network Tools

Cat6 Cables

RJ45



HMI SCADA

Course Coordinator

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