COURSE OVERVIEW FE0169
Asset Integrity Management

Course Title
Asset Integrity Management

Course Date/Venues
October 05-09, 2025/Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE

Course Reference
FE0169

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.

This course is designed to provide participants with a detailed and up-to-date knowledge of Asset Integrity Management. It covers the components of an AIM system, international standards and guidelines and AIM governance and organizational roles; the risk-based approach in AIM, asset life cycle management, inspection planning and strategies; the non-destructive testing (NDT) techniques, corrosion and degradation mechanisms and condition monitoring techniques; the integrity data management systems, fitness-for-service (FFS) assessment, risk-based inspection (RBI) and RBI methodology and elements; developing and updating an RBI program and reliability engineering in AIM, asset criticality analysis (ACA) and root cause failure analysis (RCFA).

During this interactive course, participants will learn piping and pipeline integrity, pressure vessel and tank integrity, rotating equipment integrity, structural integrity of support systems, instrumentation and control system integrity and refractory, insulation and fireproofing integrity; and the piping and pipeline integrity, pressure vessel and tank integrity, rotating equipment integrity, structural integrity of support systems, instrumentation and control system integrity and refractory, insulation and fireproofing integrity.

Course Objectives

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

- Apply and gain an in-depth knowledge on asset integrity management
- Discuss the components of an AIM system, international standards and guidelines and AIM governance and organizational roles
- Explain risk-based approach in AIM, asset life cycle management, inspection planning and strategies as well as the non-destructive testing (NDT) techniques, corrosion and degradation mechanisms and condition monitoring techniques
- Describe integrity data management systems, fitness-for-service (FFS) assessment, risk-based inspection (RBI) and RBI methodology and elements
- Develop and update an RBI program and discuss reliability engineering in AIM, asset criticality analysis (ACA) and root cause failure analysis (RCFA)
- Determine piping and pipeline integrity, pressure vessel and tank integrity, rotating equipment integrity, structural integrity of support systems, instrumentation and control system integrity and refractory, insulation and fireproofing integrity
- Analyze the integrity KPIs and performance monitoring, integrity management audit and gap analysis, emergency response and integrity failures, digitalization in asset integrity management and sustainability and life extension strategies

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 a wide understanding and deeper appreciation of asset integrity management for facility integrity engineers, inspection engineers, corrosion engineers, facility engineers, reliability engineers, design engineers, maintenance engineers, safety engineers, loss prevention engineers, managerial personnel and section heads and those engaged in the development and implementation of mechanical integrity programs for critical process equipment.

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.

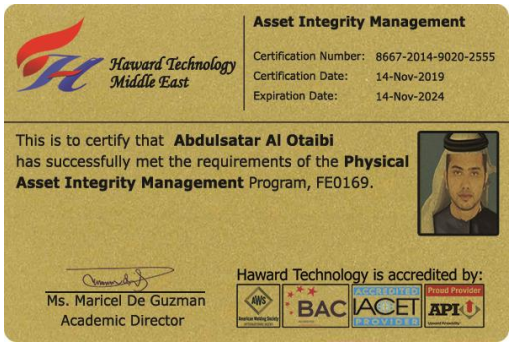
Course Certificate(s)

Internationally recognized Wall Competency Certificates and Plastic Wallet Card Certificates will be issued to participants who have successfully completed the course and passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants: -



(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *

Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

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CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-19

HTME No. 8667-2014-9020-2555

Participant Name: Abdulsatar Al Otaibi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
RE0230	Asset Integrity Management	November 10-14, 2019	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by

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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.

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. Steve Magalios, CEng, PGDip (on-going), MSc, BSc, is a **Senior Welding & Pipeline Engineer** with almost **30 years** of extensive **On-shore/Offshore** experience in the **Oil & Gas**, **Construction**, **Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **Material Science & Selection**, **Composite Repair Materials**, **Material Selection & Properties**, **Material & Inspection Foundation**, **Refractory Material Design, Application**, **Installation & Inspection**, **Welding Technology**, **Welding & Fabrication**, **Welding Inspection**, **Pipeline** Operation & Maintenance, **Pipeline** Design & Construction, **Pipeline** Repair Methods, **Pipeline** Engineering, Pipeline Integrity Management System (**PIMS**), **Pipeline** Pigging, Piping & Pipe Support Systems, **Piping** Systems & Process Equipment, **Piping** System Repair & Maintenance, **Piping** Integrity Management, Computer Aided Design (**CAD**), **Building & Road** Design Skills, **Civil Engineering Design**, **Structural Reliability** Engineering, **Road** Construction & Maintenance, **Concrete Structures & Building Rehabilitation**, **Reinforced Concrete Structures Protection**, **Geosynthetics & Ground Improvement Methods**, **Blueprint** Reading & Interpretation, **Blue Print** Documentation, Mechanical **Drawings**, **P&ID**, **Flow Diagram** Symbols and **Land Surveying** & Property Evaluation. He is also well-versed in Lean & Sour Gas, Condensate, **Compressors**, **Pumps**, Flare Knockout Drum, Block **Valve** Stations, New Slug Catcher, Natural **Gas Pipeline** & Network, Scraper Traps, Burn Pits, Risk Assessment, HSE Plan & Procedures, Quality Plan & Procedures, Safety & Compliance Management, Permit-to-Work Issuer, ASME, API, ANSI, ASTM, BS, NACE, ARAMCO & KOC Standards, MS Office tools, **AutoCAD**, **STAAD-PRO**, GIS, ArcInfo, ArcView, Autodesk Map and various programming languages such as FORTRAN, BASIC and AUTOLISP. Currently, he is the **Chartered Professional Surveyor Engineer & Urban-Regional Planner** wherein he is deeply involved in providing exact data, measurements and determining properly boundaries. He is also responsible in preparing and maintaining sketches, maps, reports and legal description of surveys.

During his career, Mr. Magalios has gained his expertise and thorough practical experience through challenging positions such as a **Project Site Construction Manager**, **Construction Site Manager**, **Project Manager**, **Deputy PMS Manager**, **Head of the Public Project Inspection Field Team**, **Technical Consultant**, **Senior Consultant**, **Consultant/Lecturer**, **Construction Team Leader**, **Lead Pipeline Engineer**, **Project Construction Lead Supervising Engineer**, **Lead Site Engineer**, **Senior Site Engineer, Welding Engineer, Lead Engineer**, **Senior Site Engineer**, **R.O.W. Coordinator**, **Site Representative**, **Supervision Head** and **Contractor** for international Companies such as the Penspen International Limited, Eptista Servicios de Ingeneria S.I., J/V ILF Pantec TH. Papaioannou & Co. – Emenergy Engineering, J/V Karaylannis S.A. – Intracom Constructions S.A., Ergaz Ltd., Alkyonis 7, Palaeo Faliro, Piraeus, Elpet Valkaniki S.A., Asprofos S.A., J/V Depa S.A. just to name a few.

Mr. Magalios is a **Registered Chartered Engineer** and has **Master** and **Bachelor** degrees in **Surveying Engineering** from the **University of New Brunswick**, **Canada** and the **National Technical University of Athens**, **Greece**, respectively. Further, he is currently enrolled for **Post-graduate** in **Quality Assurance** from the **Hellenic Open University**, **Greece**. He has further obtained a Level 4B Certificates in Project Management from the National & Kapodistrian University of Athens, Greece and Environmental Auditing from the Environmental Auditors Registration Association (EARA). Moreover, he is a **Certified Instructor/Trainer**, a **Chartered Engineer** of Technical Chamber of Greece and has delivered numerous trainings, workshops, seminars, courses 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.

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,05th of October 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	***Welcome & Introduction***
0815 – 0830	***PRE-TEST***
0830 – 0900	***Overview of Asset Integrity Management*** *Definition and Importance of AIM • Key Objectives: Safety, Reliability, Performance • Life Cycle Stages of Asset Integrity • AIM in the Context of Asset Management Systems (ISO 55000)*
0900 - 0930	***Components of an AIM System*** *Facilities and Equipment Types in Scope • Mechanical, Structural, Instrumentation and Piping Integrity • Static versus Dynamic Assets • AIM System Hierarchy and Documentation*
0930 – 0945	*Break*
0945 – 1030	***International Standards & Guidelines*** *API 580/581, API 570, API 653, ISO 55001, ISO 31000 • Relationship with HSE, QA/QC and Maintenance Standards • Regulatory Compliance and Legal Requirements • Company-Specific Integrity Procedures*
1030 – 1230	***AIM Governance & Organizational Roles*** *Key Roles: Asset Owner, Integrity Engineer, Inspector • Functional Accountability and Decision-Making • Integrity Responsibility Matrix • Cross-Functional Collaboration with Operations and HSE*
1230 – 1245	*Break*
1245 – 1315	***Risk-Based Approach in AIM*** *Risk = Likelihood × Consequence • Categorizing Risks (People, Environment, Asset, Reputation) • Risk-Based Integrity Assessment Frameworks • Link to Inspection and Maintenance Prioritization*
1315 - 1420	***Asset Life Cycle Management*** *Integrity in Design and Construction • Commissioning and Baseline Data Capture • Operational Integrity Assurance • Decommissioning and Abandonment Planning*
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, 06th of October 2025
0730 – 0830	***Inspection Planning & Strategies*** *Periodic versus Risk-Based Inspections • Developing Inspection Schedules • Criticality-Based Inspection Priorities • Inspection Scope Development*
0830 – 0930	***Non-Destructive Testing (NDT) Techniques*** *Visual Inspection (VT), Ultrasonic Testing (UT), Radiography (RT) • Magnetic Particle Testing (MT), Dye Penetrant Testing (PT) • Advanced NDT: Phased Array, TOFD, Acoustic Emission • NDT Limitations and Data Interpretation*
0930 – 0945	*Break*
0945 – 1100	***Corrosion & Degradation Mechanisms*** *General, Localized, Pitting, Galvanic Corrosion • Erosion-Corrosion, Microbiologically Influenced Corrosion (MIC) • High-Temperature Hydrogen Attack (HTHA), Creep, Fatigue • Materials Selection and Corrosion-Resistant Alloys*
1100 – 1215	***Condition Monitoring Techniques*** *Vibration Analysis for Rotating Equipment • Thermography for Electrical and Thermal Anomalies • Oil Analysis for Wear Detection • Thickness Monitoring and Corrosion Mapping*
1215 – 1230	*Break*
1230 – 1330	***Integrity Data Management Systems*** *AIM Databases and Software Platforms • Data Quality, Validation and Traceability • Integration with CMMS and ERP Systems • Dashboards and KPI Monitoring*
1330 – 1420	***Fitness-for-Service (FFS) Assessment*** *API 579/ASME FFS Standards Overview • Level 1, 2 and 3 Assessments • Remaining Life Estimation • Acceptance Criteria and Repair Decision-Making*
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, 07th of October 2025
0730 – 0830	***Risk-Based Inspection (RBI)*** *Purpose and Benefits of RBI • RBI versus Time-Based Inspection • Scope of RBI Implementation • Key Roles and Responsibilities in RBI*
0830 – 0930	***RBI Methodology & Elements*** *Damage Mechanism Identification • Probability of Failure (PoF) and Consequence of Failure (CoF) • Risk Matrix Development and Risk Ranking • RBI Implementation Phases*
0930 – 0945	*Break*
0945 – 1100	***Developing & Updating an RBI Program*** *Data Requirements and Assessment Frequency • Risk Mitigation Strategies • Re-Assessment Triggers (Modifications, Failures, Audit Findings) • Case Study on RBI Application*
1100 – 1215	***Reliability Engineering in AIM*** *Introduction to Reliability-Centered Maintenance (RCM) • Reliability Block Diagrams and FMEA • Failure Modes and Effects on Asset Integrity • Preventive and Predictive Maintenance Linkage*

1215 – 1230	*Break*
1230 – 1330	***Asset Criticality Analysis (ACA)*** *Determining Asset Criticality • Ranking Based on Business, Safety and Environmental Impact • Risk Prioritization and Resource Allocation • Tying ACA to Maintenance and Inspection Planning*
1330 – 1420	***Root Cause Failure Analysis (RCFA)*** *Incident versus Chronic Failure Investigation • 5 Whys, Fishbone Diagrams and Fault Tree Analysis • Systematic RCA Process • Linking RCFA Results to Integrity Improvement*
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*

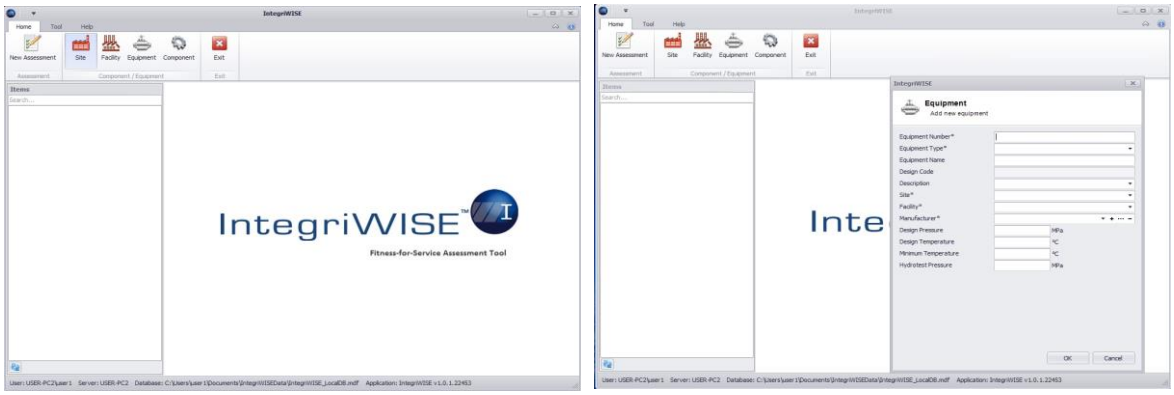
Day 4: ***Wednesday, 08th of October 2025***

0730 – 0830	***Piping & Pipeline Integrity*** *Design Codes and Failure Modes (API 570) • Common Degradation Mechanisms in Piping Systems • Pigging, Inline Inspection (ILI) and Leak Detection • Buried Pipeline Integrity and Cathodic Protection*
0830 – 0930	***Pressure Vessel & Tank Integrity*** *Inspection Requirements (API 510, API 653) • Minimum Thickness Calculations • Shell Settlement, Foundation Issues and Roof Integrity • Repairs, Rerating and Re-Certification*
0930 – 0945	*Break*
0945 – 1100	***Rotating Equipment Integrity*** *Pumps, Compressors, Turbines: Failure Modes • Condition Monitoring Parameters (Vibration, Oil, Temperature) • Alignment, Balancing and Lubrication Practices • Maintenance Planning and Overhauls*
1100 – 1215	***Structural Integrity of Support Systems*** *Assessment of Platforms, Frames and Pipe Racks • Load Testing and Deflection Analysis • Welding Inspection and Fatigue Cracking • Inspection Frequency and Fitness Assessment*
1215 – 1230	*Break*
1230 – 1330	***Instrumentation & Control System Integrity*** *Integrity of Pressure, Level and Flow Instruments • Loop Checking and Function Testing • Safety Instrumented Systems (SIS) and SIL Verification • Calibration Intervals and Management*
1330 – 1420	***Refractory, Insulation & Fireproofing Integrity*** *Visual Inspection and NDT Methods for Refractory • Hot Spot Detection and Lining Failure Analysis • Fireproofing Condition Assessment • Repair Techniques and Performance Tracking*
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, 09th of October 2025
0730 – 0830	***Integrity KPIs & Performance Monitoring*** *Leading versus Lagging Indicators • Integrity Compliance Scorecards • Unplanned Failure Rate and Inspection Backlog • Data Visualization and Reporting Tools*
0830 - 0930	***Integrity Management Audit & Gap Analysis*** *Purpose and Scope of AIM Audits • Common Audit Findings and Mitigation • Gap Closure Planning • Verification and Validation Process*
0930 – 0945	*Break*
0945 – 1130	***Emergency Response & Integrity Failures*** *Emergency Preparedness for Integrity-Related Events • Leak and Rupture Scenarios • Temporary Repairs and Isolation • Post-Incident Integrity Assessment*
1130 - 1230	***Digitalization in Asset Integrity Management*** *Digital Twins for Critical Equipment • AI and Machine Learning for Failure Prediction • Cloud-Based AIM Platforms • Mobile Inspection and Reporting Tools*
1230 – 1245	*Break*
1245 – 1300	***Sustainability & Life Extension Strategies*** *Life Extension Assessment of Aging Assets • Upgrading and Retrofitting • Balancing CAPEX and OPEX • Environmental Compliance and Integrity Synergy*
1300 – 1315	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about Topics that were Covered During the Course*
1315 – 1415	***COMPETENCY EXAM***
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 the simulator "IntegriWISE™".



IntegriWISE™

Course Coordinator

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