



COURSE OVERVIEW FE0190-4D
Pipeline Inspection, Testing & Integrity Assessment
Defect Assessment in Pipelines (Practical Aspects)

Course Title

Pipeline Inspection, Testing & Integrity Assessment: Defect Assessment in Pipelines (Practical Aspects)

Course Date/Venue

Session 1: August 12-15, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: December 16-19, 2024/Oryx Meeting Room, Double Tree by Hilton Al Saad, Doha, Qatar



Course Reference

FE0190-4D



Course Duration/Credits

Four days/2.4 CEUs/24 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 is an in-depth course on the practical aspects of pipeline integrity, including corporate objectives, risk, planning integrity programs, internal inspection tools, anomaly identification and analysis, repair, coating, and pressure testing. Participants will be introduced to the technical basis for determining pipeline integrity.



This course will provide information, reinforced by case studies and exercises on pipeline defects, such as corrosion, cracking and third party damage. Methods will be discussed that can be used to make decisions on whether defects are fit for service.

The course will review the various repair techniques, their advantages and shortcomings and the logic to be followed in making repair decisions and selecting the applicable repair.

In addition, pressure testing will be studied, including an exercise based on an actual hydrostatic pressure test.





Course Objectives

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

- Apply the practical aspects of pipeline integrity, including corporate objectives, risk, planning integrity programs, internal inspection tools, anomaly identification and analysis, repair, coating, and pressure testing
- Analyze pipeline design, construction and maintenance vs. integrity and identify the threats to buried pipeline's integrity
- Define time dependent defects theory and differentiate between various types and forms of corrosion on basis of internal and external
- Develop integrity management program and list the integrity management strategies and internal inspection tools
- Perform external surveys, pressure and leak testing and pipeline rehabilitation and repair techniques
- Verify the integrity of an old pipeline and report quality control

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Howard 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 the practical aspects of pipeline integrity for engineers, inspectors and for those who are responsible for the inspection, testing, integrity, defect assessment, maintenance and repair of pipelines.

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 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: -

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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 **2.4 CEUs** (Continuing Education Units) or **24 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.

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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**. 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 Fee

Dubai	US\$ 4,500 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	US\$ 5,000 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.



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 **40 years** of extensive **On-shore/Offshore** experience in the **Oil & Gas, Construction, Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **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 Ingenieria 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.



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

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction Pipeline Integrity Assessment – Practical Aspects – Course Overview • Corporate Policies • Regulation • Standard Practices
0930 – 0945	Break
0945 – 1100	Pipeline Design, Construction & Maintenance vs. Integrity Pipeline Design • Operation • Economics
1100 – 1230	Threats to Buried Pipeline’s Integrity Time Dependent • Time Independent • Stable
1230 – 1245	Break
1245 – 1420	Time Dependent Defects Theory Corrosion Principles • Corrosion Thermodynamics • Corrosion Kinetics • Corrosion Rate Expressions
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Types & Forms of Corrosion (Internal & External) Corrosion Monitoring • Corrosion Protection (Including Cathodic Protection) • Internal Corrosion Modelling & Risk Assessment • Fatigue – Heavy Fouling/Clogging • Time Independent & Stable Factors
0930 – 0945	Break
0945 – 1030	Integrity Management Program Development Integrity Management Strategies • Main Factors Affecting Pipeline Integrity • Integrity Management Program Development
1030 – 1130	Internal Inspection Tools Types of Internal Inspection Tools • Preparing to Inspect • Data Assessment • Inspection Reports • Other Issues
1130 – 1230	External Surveys-Pipeline Integrity & Electrical Surveys Prioritisation • Methods & Techniques • Interpretation & Use of the Results • Innovation Aspects
1230 – 1245	Break
1245 – 1420	Pressure & Leak Testing The Purpose of Hydro Test • Theory • Designing a Pressure Test • How to Conduct a Hydro Test
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Practical Aspects & Case Histories Microbial Corrosion • A.C. Corrosion • Stray Current Corrosion • Stress Corrosion Cracking
0930 – 0945	Break
0945 – 1030	Pipeline Rehabilitation - Repair Techniques
1030 – 1130	Geological Aspects Aspects Tied with the Pipeline





1130 – 1230	Verifying the Integrity of an Old Pipeline <i>A Case History</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Remote Monitoring & Control of Cathodic Protection Systems
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0930	Quality Control - Reporting
0930 – 0945	<i>Break</i>
0945 – 1100	Overall Review
1100 – 1200	Exercises & Testing
1200 – 1215	<i>Break</i>
1215 – 1400	Summary, Open Forum, Course Conclusion & Closing
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org