COURSE OVERVIEW FE1015
API 584: Integrity Operating Windows (IOWs)

Course Title
API 584: Integrity Operating Windows (IOWs)

Course Date/Venue
September 22-26, 2025/Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
FE1015

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 with a detailed and up-to-date overview of API 584: Integrity Operating Windows (IOWs). It covers the role of integrity in process safety management; the key elements of asset integrity programs and the fundamental concepts of IOWs; the structure and scope of API RP 584, IOWs in the asset lifecycle and types and hierarchy of IOWs; the stakeholder roles and responsibilities, process for establishing IOWs and critical process parameters risk-based approach to IOWs; setting IOW limits and the sources of data for IOW development; and the change management in IOWs, IOWs in process safety and operational excellence.

During this interactive course, participants will learn the IOW documentation and communication, monitoring and data collection; the immediate response actions, investigation and root cause analysis; the integration with maintenance and inspection programs and training and competency for IOWs; the damage mechanisms and IOWs in specialized equipment and processes; the major failures and impact of IOW deviations on asset integrity; the auditing and assurance of IOW programs, leveraging digitalization, advanced analytics, benchmarking and best practices; the IOWs in regulatory compliance and audit readiness; the program effectiveness review and self-assessment; and the action planning for IOW implementation.

Course Objectives

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

- Apply and gain an in-depth knowledge on integrity operating windows (IOWs) in accordance with API 584 standards
- Discuss the role of integrity in process safety management and the key elements of asset integrity programs
- Explain the fundamental concepts of IOWs, structure and scope of API RP 584 and IOWs in the asset lifecycle
- Identify the types and hierarchy of IOWs including stakeholder roles and responsibilities
- Recognize the process for establishing IOWs as well as critical process parameters risk-based approach to IOWs, setting IOW limits and sources of data for IOW development
- Carryout change management in IOWs and IOWs in process safety and operational excellence
- Employ IOW documentation and communication including IOW monitoring and data collection
- Implement immediate response actions, investigation and root cause analysis and integration with maintenance and inspection programs
- Develop training and competency for IOWs and discuss damage mechanisms and IOWs in specialized equipment and processes
- Review major failures and the impact of IOW deviations on asset integrity
- Apply auditing and assurance of IOW programs, leveraging digitalization, advanced analytics, benchmarking and best practices
- Carryout IOWs in regulatory compliance and audit readiness, program effectiveness review and self-assessment and action planning for IOW implementation

Who Should Attend

This course provides an overview of all significant aspects and considerations of API 584: integrity operating windows (IOWs) for mechanical, piping, and static equipment engineers, inspection and integrity engineers, reliability and maintenance engineers, hse and process safety engineers, process engineers , project engineers and other technical staff who evaluate IOW programs.

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**.*

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. Danny Gul (**P.E**), is a **Senior Inspection Engineer** with extensive years of experience within the **Oil & Gas**, **Petrochemical**, **Process** and **Power** Industries. His wide expertise lies extensively in the areas of **Risk Based** Inspection, **RBI** Methodology, **RBI** Assessment, Fitness-for-Service (**FFS**), **Tank** Inspection & Repair, **Tank** Calibration &Testing, Welded Tanks for Oil Storage (**API 650**), Atmospheric & Low Pressure Inspection (**API RP 575**), **Pressure Vessel** Inspection & Repair, Inspection & Repair of Erection Activities, **Corrosion & Materials** Inspection, **Metallurgy**, **Corrosion & Prevention** of **Failures**, **Material Selection & Properties**, **Corrosion** Prevention, **Corrosion** Technology & Inspection, **Materials & Corrosion** Control, **Metallurgy & Corrosion** Engineering, **Material** Selection & Properties, **Welding** Inspection Technology, **Welding & Machining**, **Welding** Procedure Specifications & Qualifications, **Welding** Safety, **Fabrication & Site** Inspection, **Site Erection Quality Control**, **Welding & Non-Destructive Testing** (NDE), **Hydro & Pneumatic** Testing, Degradation Mechanism & Consequence Analysis, **Risk** Management & Reduction, **Risk** Analysis, **Risk** Determination & Assessment, **Equipment** Integrity & Reliability, Failure Mode & Effect Analysis (**FMEA**), **Reliability & Asset** Management, **Piping** System, Process Hazard Analysis (**PHA**), **Human Factor** Analysis, Hazard & Operability (**HAZOP**), Layer of Protection Analysis (**LOPA**), **QRA**, **SIL** Evaluation, **FTA**, **ETA** and **Safety & Environmental** Assessment.

During his Career Life, Mr. Gul has gained his practical and field experience through his various significant positions and dedication as the **Professional Mechanical Engineer**, an **International Welding Engineer (IWE)**, **Inspection Specialist**, **API 653 Project Control Coordinator**, **Technical Instructor/Trainer (API ASME)**, **Nuclear Material & Equipment Inspector**, **QA/QC Head and Expert**, **API 653 & API 580 Authorized Inspector, Process Safety, Inspection** and **Integrity Expert** for numerous international companies like the Schlumberger, Tumas, Silverteknik, Assystem, American Petroleum Inspector, Alltechmep, TUV Nord and Szutest.

Mr. Gul has a **Bachelor's** degree in **Mechanical Engineering** from the **Istanbul Technical University**, **Turkey**. Further, he is a **Certified Instructor/Trainer**, a **Certified** Aboveground Storage Tank Inspector (**API 653**), a **Certified** Risk Based Inspector (**API 580**), a Certified Corrosion & Materials Inspector **(API 571)**, a **Certified** Pressure Vessel Inspector (**API 510**), a **Certified** Piping Inspector (**API 570**), and holds a **Level 2** certificate in **Radiographic Testing (RT)** and **Ultrasonic Testing (UT)** by the **certification of Welds and Testing** and a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**). He has further delivered numerous trainings, courses, seminars, conferences & workshops internationally.

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.

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: Monday, 22nd of September 2025

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of Asset Integrity Management*** *Definition and Objectives of Asset Integrity • Regulatory and Industry Drivers • Role of Integrity in Process Safety Management • Key Elements of Asset Integrity Programs*
0930 – 0945	*Break*
0945 – 1030	***Integrity Operating Windows (IOWs)*** *Definition and Fundamental Concepts of IOWs • Purpose and Benefits of IOWs • Historical Background and Industry Incidents • Key Terminology and Definitions*
1030 – 1130	***Structure & Scope of API RP 584*** *Purpose and Evolution of API RP 584 • Major Changes in the Second Edition • Structure of the Standard and Its Key Sections • Relationship with Other API Standards (e.g., 510, 570, 580, 581)*
1130 – 1215	***IOWs in the Asset Lifecycle*** *IOWs During Design and Commissioning • IOWs in Normal Operation • IOWs in Maintenance and Shutdown • IOWs in Decommissioning*
1215 – 1230	*Break*
1215 – 1230	***Types & Hierarchy of IOWs*** *Critical versus Non-Critical IOWs • Primary and Secondary IOWs • Parameter Selection and Prioritization • Setting Limits: Normal, Alert, Action*

1230 - 1420	***Stakeholder Roles & Responsibilities*** *Operations and Engineering • Process Safety and Inspection • Management and Leadership • Training and Competency Requirements*
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: ***Tuesday, 23rd of September 2025***

0730 – 0900	***Process for Establishing IOWs*** *Step-by-Step Methodology per API RP 584 • Integrating IOWs with Existing Management Systems • Documentation Requirements • Approval and Governance*
0900 – 0930	***Identifying Critical Process Parameters*** *Process Parameter Selection Criteria • Examples of Common IOW Parameters (Temperature, Pressure, etc.) • Use of Process Flow Diagrams and P&IDs • Failure Modes and Effects Related to Parameters*
0930 – 0945	*Break*
0945 – 1100	***Risk-Based Approach to IOWs*** *Integration with Risk-Based Inspection (RBI) • Consequence and Likelihood Assessment • Linkage to Damage Mechanisms • Prioritization of IOW Development*
1100 – 1230	***Setting IOW Limits*** *Establishing Normal, Alert, and Action Limits • Technical Basis for Limit Selection • Degradation Mechanisms and Threshold Values • Documenting the Rationale for Limits*
1215 – 1230	*Break*
1230 – 1330	***Sources of Data for IOW Development*** *Use of Historical Operating Data • OEM Recommendations and Design Documents • Process Hazard Analysis (PHA) Outputs • Incident Investigation Learnings*
1330 – 1345	***Change Management in IOWs*** *Managing Revisions and Updates • MOC Process for IOW Changes • Communication of Changes to Stakeholders • Recordkeeping and Traceability*
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: ***Wednesday, 24th of September 2025***

0730 – 0900	***IOWs in Process Safety & Operational Excellence*** *Alignment with Process Safety Management (PSM) Systems • Relationship to Safety Instrumented Systems (SIS) • Integration with Permit-to-Work and LOTO Systems • Role in Incident Prevention and Mitigation*
0900–0930	***IOW Documentation & Communication*** *Developing IOW Datasheets • Use of Digital Tools and Databases • Visualization and Dashboarding Options • Communication and Awareness Programs*
0930 – 0945	*Break*

0945 – 1100	***IOW Monitoring & Data Collection*** *Selection of Monitoring Technologies • Real-Time versus Periodic Monitoring • Data Integrity and Quality Assurance • Alarm Management for IOW Deviations*
1100 – 1230	***Response to IOW Deviations*** *Immediate Response Actions • Investigation and Root Cause Analysis • Short-Term versus Long-Term Corrective Actions • Documentation and Reporting Requirements*
1215 – 1230	*Break*
1230 – 1330	***Integration with Maintenance & Inspection Programs*** *Coordination with Mechanical Integrity Inspections • Impact on Preventive and Predictive Maintenance • Role in Turnaround Planning and Execution • Feedback Loop to Reliability and Inspection Teams*
1330 – 1345	***Training & Competency for IOWs*** *Training Requirements for Staff • Competency Assessment and Development • Case Studies and Practical Exercises • Sustaining Awareness and Engagement*
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: ***Thursday, 25th of September 2025***

0730 – 0900	***Damage Mechanisms & IOWs*** *Corrosion, Erosion, and Fouling • High-Temperature Hydrogen Attack (HTHA) • Brittle Fracture and Embrittlement • Stress Corrosion Cracking (SCC) and Others*
0900 – 0930	***IOWs in Specialized Equipment & Processes*** *Fired Heaters and Boilers • Pressure Vessels and Piping Systems • Reactors, Columns, and Exchangers • Storage Tanks and Utilities*
0930 – 0945	*Break*
0945 – 1100	***Lessons Learned from Industry Incidents*** *Review of Major Failures (Case Studies) • Impact of IOW Deviations on Asset Integrity • Human Factors and Organizational Lessons • Incorporating Learnings into IOW Programs*
1100 – 1230	***Auditing & Assurance of IOW Programs*** *Internal and External Audit Processes • Key Audit Checklist Items • Performance Metrics and KPIs • Corrective and Preventive Actions*
1215 – 1230	*Break*
1230 – 1330	***Leveraging Digitalization & Advanced Analytics*** *Integration with Digital Twins • Predictive Analytics for IOWs • Use of AI and Machine Learning • Remote Monitoring and IIoT Applications*

1330 – 1345	***Continuous Improvement & Program Maturity*** *Feedback Mechanisms and Reviews • Benchmarking and Best Practices • Roadmap to Program Maturity • Sustaining Organizational Culture for Integrity*
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: ***Friday, 26th of September 2025***

0730 – 0830	***Case Study Workshops: Developing IOWs*** *Team-Based Scenario Analysis • Developing IOWs for a Process Unit (e.g., Distillation Column) • Setting Limits and Response Plans • Group Presentations and Feedback*
0830 – 0930	***Real-World IOW Deviation Scenarios*** *Role-Play Exercises on Deviation Management • Root Cause Analysis and Corrective Action Planning • Communication and Escalation Pathways • Documentation and Regulatory Reporting*
0930 – 0945	*Break*
0945 - 1100	***IOWs in Regulatory Compliance & Audit Readiness*** *Understanding Regulatory Expectations (e.g., OSHA, EPA) • Preparing for Audits and Inspections • Document Control and Recordkeeping Best Practices • Aligning IOWs with Company Policies*
1100 – 1230	***Program Effectiveness Review & Self-Assessment*** *IOW Program Maturity Assessment Tools • Gap Analysis and Action Planning • Measuring Effectiveness with Performance Indicators • Continuous Improvement Strategies*
1230 – 1245	*Break*
1245 – 1315	***Action Planning for IOW Implementation*** *Developing an Implementation Roadmap • Change Management and Stakeholder Engagement • Resource Planning and Training Schedules • Milestones and Success Criteria*
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

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