COURSE OVERVIEW FE0089
API Codes (Rotary & Static Equipment)

Course Title
API Codes (Rotary & Static Equipment)

Course Reference
FE0089

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

Course Date/Venue

Session(s)	Date	Venue
1	January 26-30, 2025	Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA
2	June 16-20, 2025	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	October 12-16, 2025	Oryx Meeting Room, Double Tree by Hilton Al Saad, Doha, Qatar
4	December 21-25, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

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 on API Codes (Rotary & Static Equipment). It covers the role of API standards in industrial applications; the classification of API codes and the distinction between rotary and static equipment and the relevant codes; the scope and application of API 610 in pump design and operation, the key requirements and applications of steam turbines; the special-purpose steam turbines for petroleum and chemical industries; the importance of API codes for compliance and safety; the application and key points in the design and operation of gear units; and the lubrication systems and their critical role in rotary equipment.

Further, the course will also discuss the gas turbine requirements for industrial applications; the key standards for compressors and expander-compressors used in the industry; designing, maintaining and inspecting reciprocating compressors; addressing the common operational challenges and the role of API standards in troubleshooting; the design and construction of welded steel tanks; the tank inspection, repair, alteration and reconstruction of storage tanks; the heat exchanger design and application in industrial operations; and the air-cooled heat exchangers and their applications.

During this intellective course, participants will learn the large, welded, and low-pressure storage tanks design and construction in accordance with API 620; the inspection and maintenance of static equipment and pressure vessel; the key requirements and applications of the piping inspection code; the evaluation of existing equipment for continued service and operation; the role of risk-based inspection (RBI) in maintaining the integrity of rotary and static equipment; the quality control during refractory installation in static equipment and maintaining equipment integrity and reliability; integrating API codes for operational decision-making; the API certification process for inspectors and operators; the latest updates in API standards related to rotary and static equipment; and the challenges faced in complying with API standards and strategies for overcoming them.

Course Objectives

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

- Apply and gain a comprehensive knowledge on rotary and static equipment in accordance with the API codes
- Discuss the role of API standards in industrial applications
- Classify API codes and the distinction between rotary and static equipment and the relevant codes
- Explain the scope and application of API 610 in pump design and operation including the key requirements and applications of steam turbines
- Discuss the special-purpose steam turbines for petroleum and chemical industries and the importance of API codes for compliance and safety
- Recognize the application and key points in the design and operation of gear units as well as the lubrication systems and their critical role in rotary equipment
- Identify gas turbine requirements for industrial applications and the key standards for compressors and expander-compressors used in the industry
- Design, maintain and inspect reciprocating compressors as well as address common operational challenges and the role of API standards in troubleshooting
- Discuss API 650 for the design and construction of welded steel tanks and apply tank inspection, repair, alteration and reconstruction of storage tanks
- Illustrate heat exchanger design and application in industrial operations and discuss air-cooled heat exchangers and their applications
- Design and construct large, welded and low-pressure storage tanks in accordance with API 620
- Inspect and maintain static equipment and pressure vessel as well as identify the key requirements and applications of the piping inspection code
- Evaluate existing equipment for continued service and operation and discuss the role of risk-based inspection (RBI) in maintaining the integrity of rotary and static equipment

- Implement quality control during refractory installation in static equipment and maintain equipment integrity and reliability
- Integrate API codes for operational decision-making and discuss API certification process for inspectors and operators
- Identify the latest updates in API standards related to rotary and static equipment and the challenges faced in complying with API standards and strategies for overcoming them

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 API codes (rotary and static equipment) for mechanical engineers, rotating equipment engineers, static equipment engineers, maintenance engineers and technicians, inspection engineers, operations engineers, reliability engineers, plant managers and supervisors and other technical staff.

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 Fee

Al Khobar	**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.
Abu Dhabi	**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.
Doha	**US$ 6,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
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.

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: -

- 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.

- 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.

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. Geoff Kaschula is a **Senior Inspection & Welding Engineer** with over **45 years** of extensive experience within the **Oil & Gas**, **Petrochemical**, **Process** and **Power Industries**. His fields of specialization widely cover in the areas of **Welding & Fabrication** Engineering, **Welding & Cutting Welding** Technology, **Fabrication & Welding** Inspection, **Design**, **Fabrication**, **Construction**, **Installation**, **Commissioning**, **Inspection** & **Maintenance** of **Process Equipment**, Factory Acceptance Test (**FAT**), **Boilers**, **Pressure Vessels**, **Piping Systems**, **Structures** & **Storage Tanks**; **Condition Assessment** of Rotating & Auxiliary Equipment like **Compressors**, **Steam Turbines**, **Pumps**, **Heat Exchangers** & **Valves**; Risk Based Inspection (**RBI**), Fitness-For-Service (**FFS**), **In-Service Inspection & Condition** Assessment, **Steam Drums & Pressure Vessels**, **Tanks**, **Piping** Inspection, Advanced Integrity Management for **Corrosion** & Inspection, **Failure Analysis**, Flaw Evaluation, Remnant Life Determination, Capacity Reviews for Process and Power Equipment, Asset Management and Project Management. He has also worked extensively with international industry standards such as ASME VIII div 1 & 2, TEMA, BS/EN 13445, BS/EN 12952, API 650, API 653, ANSI B31.1, ANSI B31.3, PD5500, AWS D1.1, SANS 10162, just to name a few. Mr. Kaschula is currently the **Director** of **RBI-Asset Management** wherein he provides technical support and consultancy services in the field of physical infrastructure asset management.

During his career life, Mr. Kaschula has gained his practical and field experience through his various significant positions and dedication as the **Director/Owner**, **Project Manager**, **QE Division Manager**, **Resident Inspection Engineer**, **Refurbishment Inspection Engineer**, **Inspection Engineer**, **Welding Engineer**, **QA/QC Engineer**, **Appointed Statutory Management Representative**, **Technical Assessor** and **Senior Instructor/Trainer** for numerous international companies like the Parsons Brinckerhoff Africa, Weltech CC., Projects Expedited (Pty) Ltd., Airtec Davidson (Pty) Ltd. and Hubert Davies, Arnot & Hendrina Power Station, Projects Expedited, Airtech Davidson & the Department of Transport.

Mr. Kaschula has a **National Diploma** (**Welding Engineer**) and a **Registered Professional Technologist** and **International Welding Technologist**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified API 510 Pressure Vessel Inspector**, a **Certified API 570 Piping Inspector**, a **Certified API 580 Risk Based Inspector**, a **Registered Inspector** & **Competent Person** for Boilers, Pressure Vessels & Pressure Equipment, an ISO 9001 Lead Auditor and a member of South African Institute of Welding. He has further delivered numerous trainings, courses, seminars, conferences and workshops 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 to API Standards:*** *Overview of the American Petroleum Institute & the Role of API Standards in Industrial Applications*
0930 – 0945	*Break*
0945 – 1045	***Classification of API Codes:*** *Understanding the Distinction Between Rotary & Static Equipment & the Relevant Codes*
1045 – 1145	***API 610 - Centrifugal Pumps for Petroleum, Petrochemical & Natural Gas Industries:*** *Scope & Application of API 610 in Pump Design & Operation*
1145 – 1230	***API 611 - General-Purpose Steam Turbines for Petroleum, Chemical & Gas Industry Services****: Key Requirements & Applications of Steam Turbines*
1230 – 1245	*Break*
1245 – 1330	***API 612 - Special-Purpose Steam Turbines for Petroleum & Chemical Industries:*** *Special-Purpose Steam Turbines & their Unique Requirements*
1330 – 1420	***Importance of API Codes for Compliance & Safety:*** *How Adherence to API Codes Impacts Operational Efficiency & Safety*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***API 613 - Special-Purpose Gear Units for Petroleum & Chemical Industry Services:*** *Application & Key Points in the Design & Operation of Gear Units*
0830 – 0930	***API 614 - Lubrication, Shaft-Sealing & Control-Oil Systems for Special-Purpose Applications:*** *Understanding Lubrication Systems & Their Critical Role in Rotary Equipment*
0930 – 0945	*Break*
0945 – 1100	***API 616 - Gas Turbines for Petroleum, Chemical & Gas Industry Services:*** *Overview of Gas Turbine Requirements for Industrial Applications*
1100 – 1230	***API 617 - Axial & Centrifugal Compressors & Expander-Compressors:*** *Key Standards for Compressors & Expander-Compressors Used in the Industry*
1230 – 1245	*Break*
1245 – 1330	***API 618 - Reciprocating Compressors for Petroleum, Chemical & Gas Industry Services:*** *Design, Maintenance & Inspection of Reciprocating Compressors*
1330 – 1420	***Operational Challenges & API Codes for Rotary Equipment:*** *Addressing Common Operational Challenges & the Role of API Standards in Troubleshooting*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***API 650 - Welded Tanks for Oil Storage:*** *Overview of API 650 for the Design & Construction of Welded Steel Tanks*
0830 – 0930	***API 653 - Tank Inspection, Repair, Alteration & Reconstruction:*** *Inspection, Repair & Maintenance of Storage Tanks*
0930 – 0945	*Break*
0945 – 1100	***API 660 - Shell-And-Tube Heat Exchangers:*** *Overview of Heat Exchanger Design & Application in Industrial Operations*
1100 – 1230	***API 661 - Air-Cooled Heat Exchangers for General Refinery Services:*** *Understanding Air-Cooled Heat Exchangers & their Applications*
1230 – 1245	*Break*
1245 – 1330	***API 620 - Design & Construction of Large, Welded, Low-Pressure Storage Tanks:*** *Application of API 620 in Low-Pressure Tanks Used in Industrial Operations*
1330 – 1420	***Inspection & Maintenance of Static Equipment:*** *Best Practices for Inspection, Maintenance & Adherence to API Standards for Static Equipment*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***API 510 - Pressure Vessel Inspection Code:*** *Overview of Inspection & Maintenance for Pressure Vessels*
0830 – 0930	***API 570 - Piping Inspection Code:*** *Key Requirements & Applications of the Piping Inspection Code*
0930 – 0945	*Break*
0945 – 1100	***API 579 - Fitness-for-Service:*** *Understanding the Evaluation of Existing Equipment for Continued Service & Operation*
1100 – 1230	***API 580 - Risk-Based Inspection:*** *The Role of Risk-Based Inspection (RBI) in Maintaining the Integrity of Rotary & Static Equipment*
1230 – 1245	*Break*
1245 – 1330	***API 936 - Refractory Installation Quality Control:*** *Best Practices for Quality Control during Refractory Installation in Static Equipment*
1330 – 1420	***Maintaining Equipment Integrity & Reliability:*** *How API Codes Contribute to Long-Term Integrity & Operational Reliability*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Case Studies on API Codes in Rotary & Static Equipment:*** *Real-World Examples of How API Codes are Applied in Industry Settings*
0830 – 0930	***Interpreting API Codes for Operational Decision-Making:*** *How to Interpret & Apply API Codes to Make Informed Decisions in Operations*
0930 – 0945	*Break*
0945 – 1100	***API Certification Programs & Requirements:*** *Overview of the API Certification Process for Inspectors & Operators*

1100 – 1230	***New Developments & Updates in API Codes:*** *Latest Updates in API Standards Related to Rotary & Static Equipment*
1230 – 1245	*Break*
1245 - 1345	***Challenges in API Code Compliance:*** *Discussion of Challenges Faced in Complying with API Standards & Strategies for Overcoming them*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of 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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