



## **External Training Course**

# **Inspect, Test, and Maintain Piping, Flow Lines, and Headers**

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**From 19 Aug. To 23 Aug. 2024**

**From 14 Oct. To 18 Oct. 2024**

**From 02 Dec. To 06 Dec. 2024**  
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**External Training Course:**

# **Inspect, Test, and Maintain Piping, Flow Lines, and Headers**

**From 19 Aug. To 23 Aug. 2024**

**Fees: 2500 KD**

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## **Course Overview**

Piping systems, flow lines, and headers are critical components in industrial operations, especially in sectors like oil and gas, petrochemicals, and power generation. These systems are essential for the safe and efficient transport of fluids, including hydrocarbons, chemicals, and steam, under various pressure and temperature conditions. Given their critical role, ensuring the integrity, reliability, and safety of these systems is paramount. The "Inspect, Test, and Maintain Piping, Flow Lines, and Headers" course is designed to equip participants with the knowledge and skills necessary to manage the lifecycle of piping systems effectively. This course provides a comprehensive understanding of the principles and practices involved in the inspection, testing, and maintenance of these systems. Participants will gain insights into industry standards, best practices, and the latest technologies used to detect, diagnose, and mitigate potential issues in piping systems. The course covers various methods of inspection and testing, including non-destructive testing (NDT) techniques, pressure testing, and flow testing. Additionally, participants will learn about the maintenance strategies that help extend the life of piping systems, prevent failures, and ensure compliance with safety regulations. Through a blend of theoretical knowledge and practical case studies, this course prepares professionals to implement effective inspection and maintenance programs that enhance operational safety, minimize downtime, and optimize the performance of piping, flow lines, and headers.

## **Course Objectives**

**Understand the Fundamentals of Piping Systems:** Gain a solid understanding of the design, construction, and operation of piping systems, flow lines, and headers used in various industrial applications.

**Identify Potential Risks and Hazards:** Recognize common issues and potential hazards in piping systems, including corrosion, erosion, and mechanical stress, and understand their impact on system integrity.

**Apply Inspection Techniques:** Learn and apply various inspection methods, including visual inspection, ultrasonic testing, radiography, and other non-destructive testing (NDT) techniques, to assess the condition of piping systems.

**Conduct Pressure and Flow Testing:** Perform pressure testing and flow testing to verify the strength and functionality of piping systems under operational conditions.

**Develop Maintenance Strategies:** Create and implement effective maintenance strategies to ensure the longevity and reliability of piping systems, including preventive and corrective maintenance approaches.

**Interpret Standards and Regulations:** Understand and apply relevant industry standards, codes, and regulations related to the inspection, testing, and maintenance of piping systems, ensuring compliance with safety and environmental requirements.

**Troubleshoot and Resolve Issues:** Develop the skills to troubleshoot and resolve common problems encountered in piping systems, minimizing downtime and maintaining operational efficiency.

**Utilize Modern Technologies:** Explore the latest technologies and tools available for monitoring and maintaining piping systems, such as remote sensing, digital twins, and predictive maintenance.

**Implement Safety Practices:** Emphasize safety throughout the inspection, testing, and maintenance processes, ensuring that all activities are conducted in a safe and controlled manner.

**Document and Report Findings:** Learn how to accurately document and report inspection findings, maintenance activities, and test results, facilitating informed decision-making and continuous improvement.

## **Methodology**

**Expert Lectures:** In-depth sessions led by industry experts covering advanced topics.

**Interactive Workshops:** Hands-on activities and group projects to apply concepts.

**Case Studies:** Detailed analysis of real-world examples and best practices.

**Panel Discussions:** Insights and experiences shared by industry thought leaders.

**Assessments:** Evaluations and feedback to measure understanding and progress.

## **Course Content & Outlines**

### **Day 1: Introduction to Piping, Flow Lines, and Headers**

Overview of piping, flow lines, and headers in the oil and gas industry.

Importance of regular inspection and maintenance.

Regulatory requirements and industry standards.

**Day 2: Inspection Techniques and Equipment**

Visual inspection methods and best practices.

Non-destructive testing (NDT) techniques such as ultrasonic testing, radiographic testing, and magnetic particle testing.

Introduction to inspection equipment and tools.

**Day 3: Testing Procedures and Data Analysis**

Pressure testing of piping and flow lines.

Leak testing methods and procedures.

Interpretation of test results and data analysis.

**Day 4: Maintenance Planning and Execution**

Planning and scheduling maintenance activities.

Preventive maintenance strategies.

Repair and replacement considerations for piping, flow lines, and headers.

**Day 5: Safety and Compliance**

Safety protocols for working with piping systems.

Compliance with environmental regulations.

Case studies and best practices in safety and compliance.

