

# Industrial Piping Systems, Pressure Vessels & Plant Layout

## COURSE OVERVIEW

This course provides comprehensive training in the design, operation, and maintenance of industrial piping systems, pressure vessels, and plant layout configurations. It introduces effective plant layout strategies that enhance safety, operability, and reliability across industrial facilities. The curriculum covers system design principles, stress analysis, safety considerations, and best practices for inspection, maintenance, and failure prevention. Participants will learn essential concepts related to fluid flow, pressure containment, material selection, and mechanical integrity, along with the application of international codes and standards governing piping and pressure equipment.

## WHO SHOULD ATTEND?

This course is designed for process, mechanical, and chemical engineers, as well as operations and maintenance engineers who work with industrial piping and pressure vessel systems. It is also highly beneficial for project engineers, supervisors, managers, and technical personnel involved in the design, inspection, fabrication, operation, or maintenance of equipment used in oil and gas, petrochemical, chemical, and process industries.

## COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Apply ASME Boiler and Pressure Vessel Code and ASME B31 Piping Code requirements to design and analysis.
- Perform stress analysis of pressure vessels and piping systems under various loading conditions.
- Select materials appropriate for service conditions, corrosion environments, and mechanical requirements.
- Develop and review fabrication specifications, welding procedures, and inspection plans.
- Implement mechanical integrity programs and risk-based inspection techniques.
- Conduct fitness-for-service assessments and estimate remaining equipment life.

## KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- ASME code requirements and international standards for piping systems and pressure equipment.
- Stress analysis techniques for pressure vessels and piping components.
- Material selection criteria and common degradation mechanisms.
- Fabrication processes, welding practices, and quality control requirements.
- Non-destructive examination (NDE) methods and acceptance criteria.
- Fitness-for-service assessment principles and methodologies.
- Risk-based inspection planning and integrity management practices.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded