

## Information on pressure vessels regulations Z MEC-41

### Duration

Three days 24 Hours

### Who should attend?

This course is designed for individuals involved with pressure vessel management, design, fabrication inspection and purchasing. This course is ideal for individuals in the above fields with little or no experience as well those experienced staff who require a quick refresher



### Language

Arabic , English

### Overview

Pressure vessels are required in a wide range of industries e.g. hydrocarbon processing, chemical power, pharmaceutical, food and beverage. In each case the vessels have to be carefully designed to cope with the operating temperatures and pressures. With the advent of increased service demands, quality requirements and safety legislation, it has become vitally important for engineers to understand the fundamental principles underlying the methodologies within the standards. The mechanical design of most pressure vessels is done in accordance with the requirements contained in the ASME Boiler and Pressure Vessel Code, Section VIII. This course provides background information on the pressure vessels and their components. The course focuses on the said ASME Code. During the course participant's discussion, comments, bringing up their own problems are welcomed and encouraged. Short tests on the course material will be performed to examine the degree of delivering the right and quality of the presented material. The aim of this course is to provide participants with the basic and practical aspects of pressure vessel design, fabrication and testing requirements. The participants are intended to use this knowledge in their jobs and be prepared for more detailed pressure vessel courses.

### Contents

- General
  - Common Pressure Vessels
  - Main Pressure Vessel Components
  - Primary Process Functions of Pressure Vessels
  - Glossary of Pressure Vessels
  - Scope of ASME Code Section VIII

- Structure of Section VIII, Division 1
- Design and Construction Codes for Pressure Vessels
  - ASME Boiler & Pressure Vessel Code
  - British Standards
  - Local Regulations
- Materials of Construction
  - Material Selection Factor
  - Maximum Allowable Stress
  - Material Selection Factor
- Design
  - Design Conditions and Loadings
  - Weld Joint Efficiency and Corrosion Allowance
  - Design for Internal Pressure
  - Design for External Pressure and Compressive Stresses
  - Reinforcement of Openings
  - Flange Rating
  - Flange Design
  - Maximum Allowable Working Pressure
- Other Design Considerations
  - Vessel Support
  - Local Loads
  - Vessel Internals
- Fabrication
  - Acceptable Welding Details
  - Post weld Heat Treatment Requirements
- Inspection and Testing
  - Inspection
  - Pressure Testing
- Case Studies
  - Sizing of pressure vessel
  - Nozzle Reinforcement Assessment
  - Fatigue Calculations
  - Nozzle Reinforcement Assessment