Pipeline Analysis and Design

Z MEC-12

Duration :

Three Days 18 Hours

Who Should Attend :

Piping engineering and design personnel wishing to expand their knowledge of piping Engineers, designers, operators and draftspersons in the piping field Individuals involved with pressure vessel management, design fabrication, inspection and purchasing Practicing engineers and designers who may have experience in related disciplines and wish to expand their knowledge of the piping area

Language :

Arabic, English

Overview

Piping & vessels are required in a wide range of industries (e.g. hydrocarbon processing chemical, power, food and beverage). Piping and vessels are major expenditures in the design and construction of industrial systems. In each case the piping and vessels have to be carefully designed and operated to cope with technical and economical considerations The intention of this course is to provide participants with the basic and practical considerations related to piping & vessel systems

Topics

- Piping Components
  - Pipe- Flange - Elbow – Tee- Reducer - coupling
- Piping & Vessels Materials
  - Mechanical Properties of Metals Hardness
  - Toughness- Fatigue – Creep
  - Ferrous Metals Cast Iron-wrought Iron-Steel
  - Copper and Copper Alloys
  - Nickel and Nickel Alloys
  - Aluminium and Aluminium Alloys
- Piping Codes and Standards
  - American Society Of Mechanical Engineers ASME
  - American Society For Testing And Materials ASTM
  - American Gas Association AGA
  - American Petroleum Institute API

    - American Welding Society AWS
    - American Water Works Association AWWA
    - American Society of Heating Refrigeration and Air
    - Conditioning Engineers ASHRAE
- Piping Design Bases
    - Physical Attributes
    - Loading and Service Conditions
    - Environmental Factors
    - Materials-Related Considerations
- Basics of Pressure Vessels
    - What is a pressure vessel
    - Common types of pressure vessels
    - Components & theory of operation
- Pressure Vessel 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 & Design
    - Maximum Allowable Working Pressure
- Piping Layout
    - Codes And Standards
    - Piping Layout Considerations
    - Piping Flexibility
    - Piping of Centrifugal Pumps
    - Vents and Drains
    - Buried Piping Systems
    - Pipe Racks
    - Insulation
    - Valves
- Selection and Application of Valves
    - Valve Terminology
    - Classification Of Valves
    - Valve Types Gate – Globe – Ball – Plug – Check – Butterfly
    - Selection And Application Guidelines
    - Valve Materials