

PD643
B31.3 Process Piping Code

Day 1

- Introduction to B31.3
 - Aims, objectives, and outcomes of the course
- B31.3 Scope and Definitions
 - General Statements
 - Fluid Service Categories
- Design Considerations & Criteria
 - Design Conditions
 - Design Criteria
- Pressure Design of Piping Components
 - General
 - Pressure Design of Components
 - *Case Study* – Pipe Wall Thickness
- Design - Fluid Service Requirements & Standards for Piping Components Standards
 - Pipe
 - Fittings, Bends, Mitres, Laps and Branch Connections
 - Valves and Specialty Components
 - Flanges, Blanks, Flange Facings and Gaskets
 - Bolting
 - Dimensions and Ratings of Components
 - *Case Studies* – Branch connection & Flanges

Day 2

- Design - Fluid Service Requirements for Piping Joints
 - General
 - Welded Joints
 - Expanded Joints
 - Threaded Joints
 - Tubing Joints
 - Caulked Joints

- Soldered and Brazed Joints
- Special Joints
- Design - Flexibility and Support
 - Piping Flexibility
 - Piping Support
 - *Case Study* – Piping Flexibility
 - *Case Study* – Specification of Spring Support
- Bellows Expansion Joints

Day 3

- Design – Systems
 - Specific Piping Systems
 - Pressure Relieving Systems
- Materials
 - General Requirements
 - Materials - Miscellaneous
 - *Case Study* – Selection of Materials for Low Temperature Service
- Fabrication, Assembly & Erection
 - General
 - Welding
 - Preheating
 - Heat Treatment
 - Bending and Forming
 - Brazing and Soldering
 - Assembly and Erection

Days 3 & 4

- Inspection, Examination & Testing
 - Inspection
 - Examination
 - Examination Personnel
 - Examination Procedures
 - Types of Examination
 - Testing

- Records
- *Case Study* – Pressure Testing

Day 4

- Precautionary Considerations
- Safeguarding
- Summary
- *Case Study* – *Development of a Piping System*

Optional Code Topics

- Nonmetallic Piping and Piping Lined With Nonmetals
- High Pressure Piping
- High Purity Piping