

DDT 211 - Process Pipe Drafting

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Course Description

Piping design and drafting fundamentals as used in the process industries such as refineries and petrochemical plants. The study, use and drafting of pipes, fittings, flanges, valves, equipment and structural systems using the latest industry-standard software. Students will use industry standards to create schematic, plan, elevation, isometric, spool and 3-D drawings of various process piping components/systems.

Minimum Topics

- Overview of pipe drafting/design
- Steel pipe
- Pipe fittings
- Flange basics
- Valves
- Mechanical equipment
- Flow diagrams
- Instrumentation
- Codes & specifications
- Equipment layout
- Pipe arrangement drawings
- Sections & elevations
- Piping details

Course Competencies: The student will be able to:

1. Understand and converse in appropriate technical terminology.
2. Recognize, interpret and draw the components associated with process pipe drafting.
3. Apply industry accepted standards and current practices to process pipe drafting problems
4. Develop process pipe drafting skills and visualization.
5. Work individually and collectively to solve process pipe design and drafting problems.
6. Use generally accepted practices to route, support pipe
7. Identify basic process equipment, pipe, valves, and fittings from either photographs, drawings or generally accepted 2D and 3D symbols and identifies their nozzles and other points of connection and attachment.
8. Trace out, sketch and correctly identify process lines on a P&ID and on a corresponding 2D or 3D representation (Piping Isometrics, Plans, Sections, Renderings) and verify their correctness.
9. Identify and list the proper materials for a given piping specification.
10. Identify situations requiring the application of publicly available piping design standards, including ASME B31.3, B31.1 and API 1104.
11. Design pipe appropriately for common fabrication and erection methods.
12. Design pipe to accommodate inspection and maintenance practices.
13. Use a Computer Aided Design (CAD) system to correctly represent a schematic and dimensioned piping drawings and backup file appropriately.

(Competencies 6-13 taken from Society of Pipe Engineers & Designers Level 1 PPD Certification Requirements)