

Practical Piping Design

PIP201: Loads, Design Criteria, and Hoop Stress

Module 1: Introduction and Considerations

- *Lesson 1: Introduction*
- *Lesson 2: Considerations*

Module 2: Paragraph 301 Loads

- *Lesson 3: Determining Design Pressure - Paragraph 301.2*
- *Lesson 4: Determining Design Temperature and Ambient effects - Paragraphs 301.3 & 301.4*
- *Lesson 5: Determining Dynamic Loads - Paragraph 301.5*
- *Lesson 6: Determining Weight - Paragraph 301.6*
- *Lesson 7: Determining Displacement and Thermal Expansion - Paragraphs 301.7 & 301.8*
- *Lesson 8: Determining Cyclic Effects - Paragraph 301.10*
- *Paragraph 301 Quiz*

Module 3: Paragraph 302 Design Criteria (Safety Factors)

- *Lesson 9: Pressure Temperature Rating of Listed Components - Paragraph 302.2.1*
- *Lesson 10: Listed Components Without Pressure Temperature Ratings - Paragraph 302.2.2*
- *Lesson 11: Allowances for P/T Variations - Paragraph 302.2.4*
- *Lesson 12: Allowable Stresses and Other Design Stresses - Paragraph 302.3.2*
- *Paragraph 302 Quiz*

Module 4: Paragraph 304 - Hoop Stress

- *Lesson 13: Straight Pipe Internal Pressure Paragraph 304.1 & 304.1.2*
- *Lesson 14: Straight Pipe External pressure Paragraph 304.1.3*
- *Lesson 15: Pipe Bends Paragraph 304.2.1*
- *Lesson 16: Miter Bends Paragraph 304.2.3*
- *Lesson 17: Branch Connections - Paragraph 304.3*
- *Lesson 18: Flanges and Blanks Paragraph 304.5*

- **Lesson 19:** *Pressure Design of Unlisted Components - Paragraph 304.7.2*
- **Lesson 20:** *Paragraph 304 Quiz*