



## Mechanical Specification of Pressure Vessels and Heat Exchangers - ME-43

### COURSE

#### About the Course

This five day, intermediate level course for facility engineers and project engineers reviews the key areas associated with the mechanical design of pressure vessels for oil and gas facilities. The course is focused on vessels built in accordance to ASME VIII Div 1, considering material selection, key design calculations, and manufacturing processes. The course is not aimed at process engineers sizing equipment (PF-42 covers these elements), although a brief review of the sizing correlations is included. The course is delivered from the perspective of a vessel fabricator to better understand the dos and don'ts of ideal mechanical specification of pressurized equipment by owner/operators, in order to optimize material utilization and minimize construction costs.

*"Material was very much needed information! I learned a tremendous amount this week. All of which is extremely helpful to my current and future jobs."* - Facilities Engineer II, United States

*"Very interesting with a lot of real world demonstrations and examples that help paint the picture."* - Participant, United States

#### Target Audience

Mechanical, facilities, construction, or project engineers and plant piping/vessel designers who are involved in the specification and purchasing of pressure vessels and other pressure-containing equipment for oil and gas facilities.

#### You Will Learn

- About ASME B&PV code and the commonly used sections relevant to oil and gas equipment
- To specify correct and commonly used materials according to ASME II
- How to design vessel shells, heads, and nozzles
- How to provide accurate equipment specification documents and review documentation for code compliance
- Key fabrication processes used in the workshop and how to simplify construction through correct vessel specification
- About welding processes and inspection requirements per ASME IX

#### Course Content

- Vessel codes and standards (ASME B&PV Code, TEMA, API)
- Vessel material selection, corrosion mechanisms, heat treatment, and basic metallurgy
- Essential design calculations for vessels
- Welding process overview and inspection requirements
- Constructability and operability considerations
- Vessel integrity, evaluation, and re-purposing of pressure-containing equipment according to API/ASME

## Product Details

Categories: [Midstream](#)

Disciplines: [Mechanical Engineering](#)

Levels: [Intermediate](#)

Product Type: [Course](#)

Formats Available: [In-Classroom](#)

Instructors: [PetroSkills Specialist](#) [John Curry](#)