



## **ASME Section VIII Div. 1 BOILER AND PRESSURE VESSEL DESIGN AND FABRICATION OF PRESSURE VESSELS**

**Duration**  
3 days

### **Course overview**

Based on the rules for pressure vessel design and construction, this course is a comprehensive introduction to the requirements of Section VIII, Division 1 including background, organization, design, materials, fabrication, inspection, testing and documentation of pressure vessels. The more commonly used subsections and paragraphs will be covered, and a discussion of individual problems or situations will be included. This course is intended for beginners, as well as experienced vessel designers who would like to update their knowledge of the Code.

### **Upon Completion Of This Course You Will Be Able To**

Understand the background of the Code rules  
Apply the Code rules to more common design and fabrication situations  
Perform calculations for some of the loadings and situations not addresses by the Code  
Prepare design specifications, design reports, Data Reports, and other documentation

### **Who Should Attend**

Individuals involved with the purchase, design, fabrication, or inspection of pressure vessels. Some degree of technical background will be helpful, but such individuals are not required to have an Engineering degree or previous work experience in the subject matter.

### **Special Features**

An overview of code organization, editions and addenda will be given, and participants will learn how to prepare and submit an inquiry to the Code Committee for Code Interpretation, Code Cases or Code revision. It is suggested (but not required) that you bring the latest Edition of the ASME Code Section VIII, Division 1, and Pressure Vessels.

### **Course Highlights**

Code rules, scope and jurisdiction  
General requirements related to materials and testing  
Material toughness and impact testing requirements  
Joint categories and joint efficiencies  
General requirements related to stamping, reports, testing, PWHT, tolerances, and NDE.s  
Welding requirements  
Committees, operation and voting procedures  
Editions, addenda and interpretations  
Design Requirements  
Design loadings and allowable stresses  
Design criteria and strength theory for Division 1  
Formulas for internal pressure and tensile loading  
Procedures for external pressure (vacuum) and compressive loads  
Openings and reinforcement  
Hydrostatic and pneumatic testing  
Background of the design rules  
Example design problems and solutions

- cylindrical shells and formed heads
- Seismic loading on vertical vessels
- nozzle reinforcements
- other special components
- External pressure and stiffening rings
- Reinforced openings and ligament efficiency

Open discussion of design problems