

(ME#07) ASME SECTION VIII DIVISION 1; DESIGN AND FABRICATION OF PRESSURE VESSELS

Turning GOOD Engineers into GREAT Engineers!

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.

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.

LEARNING APPROACH

Each session will be conducted in lectures, discussion and problem solving format which is designed to provide intensive instruction and guidance on understanding Code requirements. The instructor will be available following each day's session to provide participants with further opportunity for discussion and consideration of specific problems. 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 addressed by the Code
- Prepare design specifications, design reports, Data Reports, and other documentation

AMONG INTERESTING TOPICS COVERED DURING THE COURSE

- 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