Mechanical Equipment used in Industrial Plants: Material Selection, Piping Systems, Pressure Vessels, Shell and Tube Heat Exchangers and Storage Tanks.

Who Should Attend?

This course is intended for graduates (or soon to be), designers, freelancers, technicians and engineers involved in: calculation, design, selection, manufacturing, safety, quality and maintenance of systems and equipment in industrial processes.

Previous knowledge of this subject is not required to attend to the course.

Training Objectives

The main objective of this course is to transfer to participants the theoretical and practical skills required in projects, obtained from experience and sound engineering practices.

What to Expect?

Assimilate the different mechanical equipment of an industrial plant and their main functions.

Get familiar with the different design codes of mechanical equipment.

Benefit from Lessons Learned and Best Practices from different international projects.

Methodology

Available in English and Spanish
Self-guided Hands-On
100 hs Dedication, 120 days Open
Self-paced course
Available 24/7
“Learn by doing” concept
Non-scheduled sessions
Start anytime!
Available on iPhone / Android

Resources Available

Study Notes
Introductory Videos
Multiple Choice Assignments
Real Data Sheets
Calculation Sheets Included
Extra Material
Instructor Support
Virtual Campus: Schoology
Contents

Mechanical Equipment for Industrial Plants
- Industrial Plants Introduction
- Vocabulary and terminology
- Equipment types
- Materials
- ASME B31 – Piping Systems
  - Joining methods
  - Flanges, fittings, valves
  - Piping Class Specification
- Piping Layout
  - Plot Plan, Pipe Rack, Interconnecting
- ASME VIII – Pressure Vessels
  - Pressure Vessels design
  - Design Conditions
  - Joint Efficiency
  - Internal Pressure
  - Design of shell and heads
- TEMA – Shell & Tube Heat Exchangers
  - Design of S&T heat exchangers
  - Vocabulary and terminology
  - Classification and configuration
  - Design Conditions
  - Tubesheet design
- API 650 – Aboveground Storage Tanks
  - Storage Tanks design
  - Vocabulary and terminology
  - Design Conditions
  - Tank shell design
  - 1-Foot method

Case Studies

Module 1, Industrial Plants: equipment types, materials, vocabulary and terminology.

Module 2, design of piping Systems: fittings selection, flanges, piping class, piping layout, plot plan.

Module 3, design of Pressure Vessels: internal pressure, joint efficiency, shells, heads.

Module 4, S&T Heat Exchangers: classification and configuration, Tubesheet design.

Module 5, Storage Tanks: vocabulary and terminology, shell design (1-foot method).

Instructor

Javier Tirenti. Senior Mechanical Engineer and Master in Business Administration (MBA). More than 17 years of experience in design, calculation and fabrication of pressure vessels, heat exchangers, storage tanks, piping systems and structures in general.

Duties of the above mentioned positions cover the entire cycle of an equipment, from the very conception, drawings, design and calculation, technical specifications, technical requisitions, vendor drawings, to the manufacturing phase and installation assistance. Among the developed projects, clients such as SHELL, EXXON, REPSOL, CHEVRON, GALP, CEPSA, TUPRAS and SAUDI ARAMCO can be found.

Vast experience providing specific training sessions in both classroom and online approaches. More than 75 training courses carried out in different institutions and in-company, courses oriented to graduates, designers, engineers and experienced professionals.