



FACT SHEET (ONLINE)

TEMA – Shell & Tube Heat Exchangers Part I



Equipment design for general applications: TEMA Code Organization and Scope, Heat Transfer Tube Calculation, Tubesheet and Flat Cover Design and calculation.

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?

Get familiar with the TEMA code organization and acquire vocabulary and fundamentals

Assimilate S&T Heat Exchangers Configuration and design, calculate the main parts

Benefit from Lessons Learned and Best Practices from different international projects

Methodology

Available in English and Spanish

Self-guided Hands-On

40 hs Dedication, 60 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

Terminology

Fluids, Pressure, Temperature, External loads

Shell and tube heat exchangers

Parts and types of heat exchangers

Main components

TEMA heat exchanger selection

Design codes

TEMA Code, HEI Standard

API 660, ASME VIII

Material Selection

Corrosion

Essential properties of materials

Shell and tube heat exchangers arrangement

Tube pattern

Tube / Shell side number of passes

Tube bundle design

Tubesheet, Tube bundle assembly

Baffle, Tubes

Floating head

Impingement plate

Design of external elements

Main parts

Flat covers

Case Studies

Module 1: vocabulary, terminology, TEMA code organization and material selection.

Module 2: S&T heat exchangers arrangement and thickness calculation of heat transfer tubes.

Module 3: design of Tubesheets and thickness calculation.

Module 4: design of Flat Covers and thickness calculation.

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, CEPESA, 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.

Complementary Parts

Part II: Design of Shells & Heads, Design of Conical Transitions, Design of Nozzles.

Part III: Wind & Seismic Conditions, Design of Exchanger Supports, Design of Body Flanges.

All three parts together cover the **complete design of a Shell & Tube Heat Exchanger.**