FACT SHEET

TEMA | Design of Shell & Tube Heat Exchangers

Design of Shell & Tube Heat Exchangers according to TEMA code for industrial applications.

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.

Methodology

Instructor-led training course in adult learning format with discussions, individual exercises and simplified case studies, providing practical knowledge to implement in the field.

Duration

The duration of this training course is **15 hours**, divided into several sessions to facilitate the learning process.

What to expect?

Acquire the vocabulary and basics

Understand the organization of the codes

Recognize TEMA code scope

Understand the different arrangements

Determine the adequate design conditions

Define joint efficiencies

Design and calculate the main parts:

- Tubesheets, Tubes
- Shell & Heads, Flat Covers
- Conical transitions, Nozzles

Contents

Intro & Design codes

TEMA Code

HEI Code

API 660 Code

Comparison & Compatibility

Exchangers configuration

S&T Heat exchanger configurations

Tube Side | Shell Side

Number of Passes in Tubes | Shell Side

Design conditions

Sustained and occasional loads

Pressure | Temperature

External loads

Material selection

Corrosion types

Corrosion Allowance

Material designation

Most used materials

Design of the shell

Cylindrical shells

Types of heads

Transitions

Body Flanges

Flat Covers

Tube bundle design

Tubesheet

Tube bundle structure

Baffles | Tubes | Floating Heads

Impingement Plate

Nozzle Design

Standard flanges

Nozzle necks

Reinforcement requirement

Wind and Seismic Loads

Loads acting on Heat Exchangers

Wind pressure

Seismic loads

Design of saddles

Location of saddles

Saddles standard

Anchor bolts

Case studies in the classroom:

Design and calculation of the main parts:

- Tubesheets, Tube thickness
- Shell & Heads
- Flat covers
- Conical Transitions
- Nozzles

Instructor

Senior Mechanical Engineer and master's in business administration (MBA). **More than 20 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 methodologies. More than 75 training courses carried out in different institutions and in-company, courses oriented to graduates, designers, engineers and experienced professionals.

Tailored Training

The most effective training is one that satisfies the needs of each company's business focus and deliverables. **We adapt our training programs to each specific requirement, offering bespoke solutions for each need.** The result, 100% tailored programs, developed to maximize the time investment and deliver tangible and intangible returns to the work teams.

After an assessment phase, a tailored training plan is de-signed jointly with the client. This plan is specifically tailored to meet the client's needs, focusing on effectively enhancing the capabilities of the work team. **We provide practical, dynamic and hands-on training,** making available the best instructors in each subject.

Arveng Training

Arveng Training has developed effective and practical courses for the needs of today's industrial challenges by delivering specific and high-quality engineering training courses utilizing all three approaches: classroom, on-line and tailored training. We are proud to have imparted more than 250 classroom courses, 1200 online courses and over 65 in-company sessions. Our training activities has benefited over 4500 professionals. Our greatest pride is in the letters of recommendation we receive from so many of our customers in this area.

We consider the time of our students as the most valuable. For this reason, all our courses have been designed with the main objective of quickly the professional skills of the participants, through our expert instructors in different disciplines. **We stimulate creativity, innovation and initiative to make the participants inquisitive to bring good engineering practices and lessons learned to the field that benefits their employers in the long term.**

Our Company

Arveng Training & Engineering SL is a leading company providing Training and Engineering services based in Madrid, Spain. Our mission and vision are to be a leading training and engineering services company. We are a team of highly motivated, talented high qualified professionals with more than 20 years of experience. Our main goal is to provide our clients, the best training and engineering services and to exceed their expectations in all their spheres of industrial activity, through our renowned services which are based on efficient, innovative, cost-effective and transparent principles.

Established in July 2010, mainly oriented to the industrial sector, from the very beginning Arveng has always worked with closeness, responsibility and commitment in the different areas of activity.