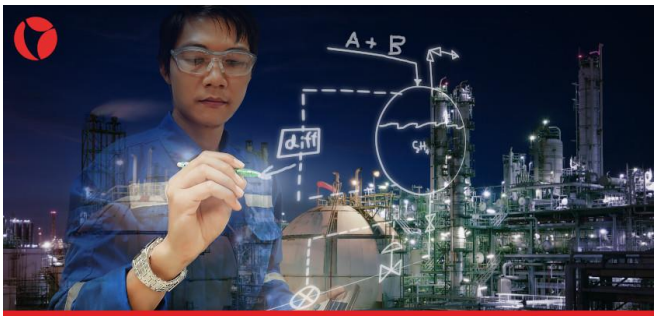
FACT SHEET (LIVE COURSE)

Process Engineering Fundamentals



Process Engineering Fundamentals: Process plants, Process Engineering, Piping design, Equipment design, Instrumentation and Control, Safety (HAZOP, SIL).

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 **16 hours**, divided into several sessions to facilitate the learning process.

What to expect?

Understand the importance of PFDs, P&IDs and hydraulic calculations.

To acquire the fundamentals for the design and sizing of piping and equipment.

To know the different types of instruments and their applications.

To become familiar with the different automated process control strategies.

To learn the fundamentals of safety in industrial processes.

Contents

Process Plants

Refinery Units.

Petrochemical Plants.

Power Generation, Renewable.

Storage and Transportation.

Ancillary Services Systems.

Water Treatment.

Engineering Projects

Types.

Phases.

Organization.

Technical Disciplines.

Engineering Documentation.

Piping Design

Materials.

Fittings.

Design.

Hydraulic calculations.

P&IDs.

List of Lines.

Equipment Design

Types.

Functionality.

Design.

Process Data Sheets.

Instrumentation

Types.

Functionality.

Design.

Process Data Sheets.

Process Control and Safety

Basic Control.

Advanced Control.

Security

Control and Cause-Effect Narratives.

Risk Analysis (HAZOP and SIL).

Case studies in the classroom:

Calculation of pipe diameter.

Calculation of pipe fittings pressure drop.

Establish design conditions: P and T.

Design of an accumulator vessel.

Design of a centrifugal pump.

Design of a desuperheater.

Specification of a level instrument data sheet.

Analysis of a fire overpressure scenario.

Determine the controller action

Instructor

Senior Chemical Engineer with Postgraduate Degree in Design and Engineering of Industrial Fluids Installations. **More than 15 years of experience in the design and calculation of hydraulic systems and mechanical equipment: pumps, pressure vessels, storage tanks, heat exchangers, piping networks, control valves, safety valves and development of basic and detailed engineering.**

The mentioned tasks start from the conception of the basic engineering definition to the detailed engineering including **initial equipment definition, PFDs and P&IDs delineation, design, calculation, and definition and review of documentation for purchase, approval of vendor documentation, and support during commissioning and start-up.** Some of the projects developed include clients such as ENAGAS, REPSOL, CFE, ENEVA, AES, NESTE, BOREALIS, SOCAR.

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 100 classroom courses, 200 online courses and over 15 in-company sessions. Our training activities has benefited over 1,500 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.