



# FACT SHEET (LIVE COURSE)

## Plant Shutdowns in Refineries



**Learning the steps and procedures involved in the work process of plant shutdowns in oil refineries. Methodologies for all stages of the major maintenance work process of process units.**

### Who should attend?

This course is intended for graduates (or soon to be), technicians, freelancers, and engineers related to reliability, maintenance, and plant inspectors seeking to improve their knowledge.

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

### Objectives

The main objective of this course is to transfer to participants the theoretical and practical skills required for plant shutdowns in refineries. This knowledge has been 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. This training course is based on the experience gathered through the development of several international projects

### Duration

The duration of this training course is **12 hours**, divided into several sessions and case studies to facilitate the learning process.

### What to expect?

Learn the different stages of the plant shutdown work process.

Learn how to estimate a budget.

Bases for developing the scope of work.

Identify the different stages of planning.

The importance of teamwork and communication.

Being able to anticipate problems.

Recommendations for the purchase of materials and contracting.

Documentation.

Technical and financial closure.



## Contents

### Introduction

What is a plant shutdown and why is it done?  
Annual and long-term plan | Organization  
Impact of the plan shutdowns on the company's economy  
Asset management through maintenance

### Budget

Cost elements  
Methodology to prepare de budget

### Scope of work

Definition of the scope  
Mechanical recommendations  
Other recommendations  
Key role of the reliability department  
Documents review | Communication meetings  
Scope closure

### Planification

Preparation of the detailed scope of work  
Software applications  
Purchase orders and inventory control  
Cost estimation for standard and non-standard activities  
Timeline and identification of critical paths  
Personnel selection  
Contracting: strategy, bidding, bid review, negotiation, contract award  
Health | Safety | Enviroment

Equipment inspection and testing  
Standards and procedures for execution  
Coordination with workshops, warehouse, and wash área  
Coordination with the HR department, Safety and Logistics  
Communication

### Execution

Execution strategies  
Meetings and progress reports  
Pre-shutdown activities  
Risk analysis for critical activities  
Responsibilities of Operations during plant handover and during the execution of maintenance work  
Responsibilities of the safety inspector  
Preparation, types and control of the work permits  
Work teams identification  
Reparations execution  
Final inspection and work approval  
Closing notes  
Additional work and non-executed activities  
Pre-startup and starup of the plant  
Plant handover | Demobilization

### Closure

Payment  
Additional activities and non executed work negotiation  
Contractors evaluation | Contract closure  
Reports from the Department of Economics. Management  
Final report and lessons learnt



## Instructor

Materials engineer, with specialization in metallurgy and doctorate in corrosion. He is over 40 years of expertise in oil production and refining, in addition to extensive research experience dedicated to the areas of corrosion, inspection, operational reliability and plant shutdowns. He has an extensive teaching experience, teaching specialized engineering courses, especially corrosion and plant shutdowns in different modalities.

## 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 designed 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 solutions for today's industrial challenges by delivering specific, high-quality engineering courses utilizing three different approaches: classroom, online, 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 have benefitted over 4500 professionals, our greatest accomplishment of all.

**We consider our students' time to be of utmost importance.** For this reason, all our courses have been designed with the main objective of quickly improving the professional skills of the participants through our expert instructors in different disciplines. **We stimulate creativity, innovation, and initiative to make the participants inquisitive, bringing good engineering practices and lessons learned to the field, that benefits their professional lives 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, providing our clients with the best in the sector. We are a team of highly motivated, talented, highly qualified professionals with over 20 years of experience. We aim to exceed expectations by offering efficient, innovative, cost-effective, and transparent services.

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

**Through experience gained by partaking in multidisciplinary engineering projects** in sectors such as Petrochemical, Energy Generation, and Industrial, we provide answers and solutions to concrete requirements, making the effort to build long-lasting and mutually beneficial relationships.