

## Oil & Gas Production Overview

### General Objectives:

The aim of this course is to provide participants with basic knowledge on the oil & gas production. The contents will cover the main processes, equipment and the most common operations performed on production areas. Safety and environmental aspects related to the production will be focused.

### Specific Objectives:

At the end of training the trainees will be able to:

- ✓ Explain how oil & gas were formed and stored in the reservoirs;
- ✓ Explain the main features of the oil & gas reservoirs;
- ✓ Explain how underground locations for oil & gas are found;
- ✓ Explain the fundamental systems on a drilling rig and the basics of well completion;
- ✓ Identify the main purpose and components of the well head & Christmas tree and explain how to operate it;
- ✓ Identify the main components of a gathering station and how the well stream reaches the separator through the manifold;
- ✓ Go through the primary separation stage. Recognize and describe the working principle of a production separator, its control and safety devices;
- ✓ Go through the oil secondary separation stage. Recognize and describe the working principle of a desalter, its control and safety devices;
- ✓ Understand how the oil is stored and export through the LACT unit to tankers;
- ✓ Go through the typical gas treatment processes. Understand its purpose, its main components and operations performed;
- ✓ Recognize the main components of a glycol and molesieve dehydration units and describe its working principles;
- ✓ Recognize the main components of an H<sub>2</sub>S removal unit and describe its working principles;
- ✓ Go through a typical cryogenic system to liquefy gas. Recognize the main components and describe working principles of turbo expander, JT valve and refrigerating systems;
- ✓ Recognize and describe the purpose and the working principle of a distillation tower;
- ✓ Identify the main applications of the treated gas, such as artificial lift, gas injection, fuel gas turbine combustors and heaters, LPG to export;
- ✓ Go through a typical produced water treatment system. Recognize and describe the work principles of both flotation unit and hydrocyclone;

- ✓ Go through a typical injection water treatment / water flood system. Recognize and describe the main components and its work principles.

**Audience:**

All.

**Workload:** 30 hours

**CONTENTS:**

**Module I – Oil & Gas Reservoirs**

**Module II – Prospection and Drilling**

**Module III – The Well, Flowline and Manifold**

**Module IV – Oil Treatment Process**

- ✓ Separators
- ✓ Treaters
- ✓ LACT Unit
- ✓ Metering and Sampling

**Module V – Gas Treatment Process**

- ✓ Dehydration
- ✓ Compression
- ✓ Liquefying
- ✓ Distillation
- ✓ Gas Lift
- ✓ Gas Injection

**Module VI – Production Water Treatment**

**Module VII – Injection Water Treatment**

**Module VIII – Workshop**