

Advanced Oil & Gas Field Processing Certification

15.00 days

PENG/ADVGB

Overview

AUDIENCE

Engineers involved in operating or designing Oil & Gas field processing facilities.

PURPOSE

This course aims to deepen understanding of Oil & Gas field processing techniques.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
understand main thermodynamic transformations involved in Oil & Gas processing,
grasp a comprehensive picture of Oil & Gas processing facilities,
simulate main Oil & Gas facilities,
master operating variables and conditions of processing facilities.

PREREQUISITE

Engineering degree or equivalent professional experience within the petroleum industry.

WAYS AND MEANS

Highly interactive training with industry-specialist lecturers.
Numerous applications and illustrations.
Extensive practice of PRO/II™ process simulation software: a case study will be developed all along these 3 weeks (simulation of a crude oil and associated gas treatment process).

OBSERVATION

This course is a combination of three separate modules. Refer to sheets pages 265, 266 and 267 for detailed content.

Agenda

MODULE 1: THERMODYNAMICS APPLIED TO WELL EFFLUENT PROCESSING

5.00 d

Well effluent.
Ideal and real fluid behavior.
Liquid-vapor equilibrium of pure substances:
Vapor pressure curves.
Enthalpy diagrams.
PRO/II™ simulation exercises.
Liquid-vapor equilibrium of mixtures - Mixture separation processes:
Phase envelopes.
Flash, distillation, absorption, stripping.
PRO/II™ simulation exercises.
Heat transfer, heat balance and thermal equipment.

MODULE 2: OIL & WATER TREATMENT

5.00 d

Need for field processing of oil - Quality requirements.

Crude oil treatment:
Crude stabilization.
Crude dehydration.
Acid crude sweetening.
Crude oil treatment process simulation using PRO/II™.
Storage tanks: technology, operations and maintenance.
Production water treatment:
Regulation for disposal.
Main treatments.
Injection water treatment:
Quality requirements.
Main treatments.

MODULE 3: GAS PROCESSING & CONDITIONING

5.00 d

Need for field processing of gas - Quality requirements.
Gas processing:
Gas dehydration.
Gas sweetening.
NGL extraction.
Simulation of a gas processing chain using PRO/II™.
Liquefied Natural Gas (LNG).