

Training - Field Processing and Surface Production Facilities



FPSPF-EN-P



Face-to-face only



10 days

This course provides a comprehensive understanding of onshore and offshore Oil & Gas field processing techniques, along with knowledge of technology and operating principles of surface production facilities equipment

Level

Knowledge

Public

Engineers and technicians interested in onshore and offshore Oil & Gas field processing technology and equipment

Objectives

Attendees will be able to implement the following skills:

- Grasp fundamentals of Oil & Gas production techniques
- Explain operating principles and conditions of oil, water and gas treatment
- Detail the technology of main equipment and specificities of offshore production techniques
- Ascertain fundamentals of process control, draw a typical safety system layout
- Explain main metering techniques, corrosion issues, its prevention and monitoring

Pedagogical & technical resources

- Very interactive training by industry specialists
- Numerous applications and illustrations

Through our LMS, the following are shared or made available :

- Introductory content a few days before the virtual class, to save time and efficiency
- Training material, applications and additional content

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

WELL EFFLUENTS BEHAVIOR

0.5 day

Different types of well effluent. Main characterization parameters. Liquid/vapor equilibrium of pure substances and mixtures. Effluent behavior. Constituents that pose problems for storage, transport or commercialization. Main specifications to conform with and required treatments.

FUNDAMENTALS OF RESERVOIR & DRIVE MECHANISM

0.25 day

Reservoirs: types, exploration techniques. Drive mechanisms. Enhanced Oil Recovery (EOR): aim and principle of the main techniques.

FUNDAMENTALS OF DRILLING, COMPLETION & WELL PERFORMANCE

0.5 day

Drilling principle. Case of offshore drilling. Main completion equipment.
Well performance. Needs for artificial lift: principle of artificial lift by pumping, gas lift...

CRUDE OIL PROCESSING

1.25 days

Crude stabilization by Multi Stage Separation (MSS). Management of foam issues. Crude dehydration and desalting. Emulsion treatment.
Crude sweetening (H₂S removal).
Examples of oil treatment and associated gas compression process schemes.

PRODUCTION & INJECTION WATER TREATMENT

1 day

Quality requirements for production water. Environment related constraints.
Main produced water treatments: API oil-water separators, plate separators, flotators, hydrocyclones...
Reasons for water injection.
Quality requirements and necessary treatments: chlorination, filtration, oxygen removal, sulfate removal.
Examples of process schemes for production and injection water treatment.

GAS PROCESSING & CONDITIONING

1.5 days

Inhibition of hydrate formation: injection of MeOH, MEG, DEG, LDHI...
Gas dehydration (drying): TEG units, solid desiccants (molecular sieves) units.
Gas sweetening. Acid components (H₂S and CO₂) removal: amine units, molecular sieves, membranes. Natural Gas Liquids (NGL) extraction: use of cryogenic refrigeration, Joule-Thompson expansion, turbo-expander.
Fundamentals of Liquefied Natural Gas (LNG) chain.

CASE OF OFFSHORE DEVELOPMENTS – FLOW ASSURANCE

1 day

- Main flow assurance issues. Multiphase flow.

Case studies: gas condensate field development; deep-offshore production.
Offshore production structures: jacket, semi-submersible, spar, TLP, FPSO...
Storage and offloading vessels (FSO, FPSO, FPU, buoy...).
Deep offshore developments. Examples of subsea architecture. Flow assurance in (deep) offshore developments.
Main preservation techniques and pigging solutions.

ROTATING MACHINERY

1 day

Fundamentals of pumping circuits and gas compression. Operating principles, technology, selection criteria, performances and operating conditions of centrifugal & volumetric pumps and centrifugal & reciprocating compressors. Gas turbines. Turbo-expanders.

THERMAL EQUIPMENT

0.5 day

Heat exchangers, air coolers, furnaces: types, operation, technology.

FUNDAMENTALS OF CORROSION

0.5 day

Different types of corrosion, prevention and monitoring.

ELECTRICAL SYSTEMS - INSTRUMENTATION & PROCESS CONTROL - SAFETY SYSTEMS

1.5 days

Electrical power generation. Electrical power distribution network and equipment.
Field instrumentation; controllers; control loop structures: simple, cascade, split range.
Distributed Control System (DCS). Safety Instrumented Systems (SIS): Emergency ShutDown Systems ESD, High Integrity Pressure Protection System (HIPPS), fire and gas system.

METERING & ALLOCATION

0.5 day

Importance of metering and production allocation. Production accounting & material balance. Introduction to material balances: liquid and gas balances. Transactional metering of liquids and gas. Multi-phase metering: advantage, principle and fields of application.

Sessions

Rueil-Malmaison - From 11/23/2026 to 12/04/2026

8270 €/HT

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com