Training - Field Operations Engineer

FIELDIG-EN-P | Face-to-face only | 60 days

This course aims to provide the in-depth technical knowledge of Oil & Gas production facilities design and operation necessary to hold rapidly, and very effectively, the position of field operations engineer or project engineer

IFP Training Certificate

Graduate Certificate

Level

Knowledge

Public

Engineers (particularly recently graduated field, design or project engineers) interested in a specialization in Oil & Gas surface production operations

Objectives

Attendees will be able to implement the following skills:

- Grasp fundamentals of reservoir engineering, drilling, well completion and servicing
- Evaluate well performance and identify needs for artificial lift
- Explain fundamental concepts underlying Oil & Gas processing
- Analyze operating conditions and basic design of oil, water and gas treatment
- Describe the technology of static equipment and rotating machinery used in production facilities
- Identify offshore development techniques and flow assurance issues
- Identify main risks related to O&G production operations and contribute to process safety management
- Contribute to the dynamics of field development projects studies

Pedagogical & technical resources

- Highly interactive training with industry specialist lecturers
- Numerous applications and illustrations
- Multiple teamwork sessions. Use of dynamic simulations and industrial case studies
- Numerous simulations performed using the PRO/II™ or HYSYS™ software
- Several tutorials with equipment in a workshop. Site/field visits

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

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Responsable

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

FUNDAMENTALS OF GEOSCIENCES & RESERVOIR ENGINEERING — 5 days

Petroleum geology and geophysics. Reservoir fluids. Petrophysics.
Well log interpretation. Well testing. Reservoir engineering and simulation.

FUNDAMENTALS OF DRILLING, WELL COMPLETION & WELL PERFORMANCE — 5 days

Fundamentals of drilling. Well completion, well servicing and workover. Well performance and artificial lift.

ADVANCED OIL & GAS FIELD PROCESSING — 15 days

Module I: Thermodynamics applied to well effluent processing

- Well effluent. Ideal gas and real fluid behavior.
- Gas compression and expansion.
- Liquid-vapor equilibrium of pure components and mixtures. Mixture separation.
- Heat transfer, heat balance and thermal equipment.

Module II: Oil & water treatment

- Crude oil treatment: stabilization, dehydration, sweetening.
- Storage equipment.
- Reject and injection water treatment.

Module III: Gas processing & conditioning

- Gas processing: dehydration, sweetening, NGL recovery.
- Fundamentals of Liquefied Natural Gas (LNG) chain.

PIPING & INSTRUMENTED SYSTEMS — 5 days

Gathering networks design. Piping. Valves. Schematization of Oil & Gas production facilities. Metallurgy. Corrosion. Cathodic protection. Instrumentation & Process Control. Safety Instrumented Systems. Metering systems.

ROTATING MACHINERY - TECHNOLOGY, SELECTION & OPERATION (IN MECHANICAL WORKSHOP) — 5 days

Centrifugal and positive displacement pumps. Centrifugal and reciprocating compressors.
Gas turbines. Turbo-expanders.

OFFSHORE FIELD DEVELOPMENT - PIPELINES & FLOW ASSURANCE — 5 days

Context of offshore developments. Fixed and floating production structures. Construction and installation of platforms.
Pipelines: technology, laying and operation. Deep offshore developments. FSO & FPSO technology. Flow assurance & multi-phase flow.

PRODUCTION ACCOUNTING & MATERIAL BALANCE — 3 days

Measures and metering systems along the chain. Liquid and gas balances. Performance monitoring and production reporting.
Case study and production balances reconstruction: back allocation, satellite fields...

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PETROLEUM ECONOMICS & PROJECT MANAGEMENT — 2 days

Project management. Project cost estimation and cost control. Fundamentals of contracts. Project profitability evaluation. Risk analysis of Exploration & Production projects.

PROCESS SAFETY MANAGEMENT — 5 days

Process hazard analysis: HAZID, HAZOP. Operating procedures. Mechanical integrity. Organizational elements. Continuous improvement elements.

FIELD DEVELOPMENT PROJECT - JURY — 10 days

During this final project, participants will select field development scenario and architecture, design wells, evaluate well performances, design and simulate process, realize heat and mass balance and evaluate profitability of their project.
This 10-day teamwork project is a real case study based on actual data. Participants are coached throughout the project to produce the required deliverables, which are to be presented on the last day (jury):

- Field architecture. Well design and completion. Process design and simulation. Main equipment sizing. Heat and mass balance. Fuel gas requirements. HAZID and plant layout.

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

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