

Training - Reservoir Fluid Properties - PVT



PVT-EN-P



Face-to-face only



5 days

This course provides a comprehensive and practical understanding of Oil & Gas reservoir fluids properties and related behavior as well as corresponding data and laboratory PVT experiments

Level

Knowledge

Public

Newly-hired and 2- to 3-year experienced reservoir engineers willing to deepen their knowledge in reservoir fluid properties and PVT models; geoscientists, petroleum engineers and production engineers moving towards reservoir engineering

Objectives

Attendees will be able to implement the following skills:

- Discuss main principles of thermodynamics applied to reservoir engineering studies
- Describe reservoir fluids and discuss corresponding fundamental PVT properties
- Describe the PVT studies performed in order to get PVT data
- Describe and apply the process to build PVT models from experimental data, especially for reservoir simulation

Pedagogical & technical resources

- Interactive lectures and exercises
- Analyzing a real PVT report
- Hands-on practices using state-of-the-art EOS package for PVT matching

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

FUNDAMENTALS OF THERMODYNAMICS

1.5 days

Petroleum fluids genesis.

Chemical composition of petroleum fluids:

- Hydrocarbon families.
- Compositional presentation of reservoir fluids.

Thermodynamics of petroleum fluids:

- Pure component, binary mixture, multi-component systems. Phase behavior.
- Hydrocarbon fluids: under saturated oil, saturated oil, dry gas, wet gas, retrograde gas. Phase envelope.

Measurements:

- Sampling: bottom hole and surface sampling; representativity and validity of sampling; analysis; PVT studies (Oil & Gas condensate).

PROPERTIES OF HYDROCARBON FLUIDS

2.5 days

Thermodynamics: mixture equilibrium, fluids classification.

Liquid-vapor equilibrium:

- Real equilibrium, thermodynamics potential, fugacity.
- Saturation pressure, formation volume factor, density, compressibility, viscosity.

Equation of state:

- Peng-Robinson, Soave-Redlich-Kwong.
- Liquid-vapor calculation.

Analytical representation: properties of light and heavy cuts.

Fluid modeling: PVT matching.

Fluid synthesis: gravity segregation, field cases, miscibility.

Downstream data: data for reservoir simulator and process.

PVT MODELING

1 day

Matching a PVT model to experimental data using a PVT EOS package.

Sessions

Rueil-Malmaison - From 10/05/2026 to 10/09/2026

3790 €/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