MERCURY

Oil & Gas Process Simulation Training

22 – 26 November 2026
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

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Ref: 15344_304896 **Date:** 22 – 26 November 2026 **Location:** Cairo (Egypt) **Fees:** 4000 Euro

Introduction:

Many of the decisions made by oil and gas companies rely on simulations of deposits, wells, infrastructure, and operations. Companies utilize oil and gas process solutions and oil and gas simulation training to create realistic representations of reservoirs, equipment use, resistivity, and environmental effects.

This type of software helps oil and gas companies predict exploration or production results and assess risks that may impact safety and profitability through advanced oil and gas process technology.

Targeted Groups:

- Program and Project Managers.
- Project Management Professionals.
- Senior-related Project Support Managers.
- Senior Management Decision Makers.
- Commercial Management Personnel.
- Project Lead Engineers.
- Project control and business services professionals responsible for planning and controlling project schedules and costs for client and contracting companies.

Course Objectives:

At the end of this oil and gas process simulation course, the participants will be able to:

- Understand the goal of a process simulation.
- Explore oil and gas process simulations.
- Recognize the importance of conducting simulations in the oil and gas industry.
- Comprehend the concept of oil and gas process simulation.
- Know the objectives of simulation exercises.
- Describe the five steps of a simulation.
- Outline the four steps of a simulation.
- Identify the there types of simulation.
- Understand the four types of models in a simulation.

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Targeted Competencies:

Upon the end of this oil and gas process simulation training, the participant's competencies will:

- Introduction to Process Simulation in Oil and Gas.
- Software Getting Started.
- Propane Refrigeration Loop.
- Low-Temperature Separation Processes "LTS Process."
- NGL Fractionation.
- Gas Dehydration and Compression.
- Crude Oil Stabilization and Associated Gas Compression.

Course Content:

Unit 1: Introduction to Process Simulation:

- What is oil and gas process simulation?
- Principles of Thermodynamic Modelling.
- Which model, for which process?

Unit 2: Software Getting Started:

- Defining the simulation basis flowsheet, components, utilities, thermodynamic package, units.
- Intrinsic data - Required data stream, compressor, heat exchanger, flash drum.
- Results Displaying tables, graphs, phase envelops, case study.
- Hydrocarbon flash separation and gas saturation with water.

Unit 3: Propane Refrigeration Loop:

- Process description and applications LNG, NGL extraction.
- Vaporization of propane through an expansion valve.
- Using a CONTROLLER.
- Using the "defined to" feature.
- Running a case study.

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Unit 4: Low-Temperature Separation Processes "LTS Process":

- Description of NGL recovery process, principles, and specifications.
- LTS process using external refrigeration chiller.
- LTS process using a Joules Thomson valve.
- LTS process using an expander.
- Meeting the hydrocarbon dew point specification.

Unit 5: NGL Fractionation:

- Process Description.
- Simulate a distillation column performance specifications, pressure profile.
- Determine the minimum reflux ratio and the number of trays.
- Estimate the top tray pressure.
- Optimization of the feed tray.
- NGL Fractionation in Oil and Gas.

Unit 6: Gas Dehydration and Compression:

- Gas dehydration with glycol process, principle, and specs.
- Simulate a typical TEG unit.
- Review methods to saturate gas with water.
- Determine the water dew point.
- The temperature profile in the absorber.

Unit 7: Crude Oil Stabilization and Associated Gas Compression:

- Oil stabilization process, principle, and specs.
- Simulate a typical multi-stage oil stabilization unit.
- Meeting RVP, TVP, and API specifications.
- Compression of the associated gases.