# Introduction to HYSYS in
# Oil and Gas

**Website: www.btsconsultant.com**

**Email: info@btsconsultant.com**

**Telephone: 00971-2-6452630**

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## Course Description:

HYSYS serves as the engineering platform for modeling processes from upstream, through gas processing and cryogenic facilities, to refining and chemical processes. This course focuses on how to use HYSYS software in order to model different oil and gas processes for design analysis. Participants will complete the preliminary process of flow diagrams, mass and energy balance, and equipment sizing based on HYSYS operations. This course will also cover how to build, navigate, and optimize process simulations using HYSYS.

## Who Should Attend?

- Engineers

- International Oil and Gas companies staff

- Anyone with a background in Oil & Gas and HYSYS software

- Decision makers/ Investors in the oil and gas sector

## Course Objectives:

- Learning how to extend objects that allow custom unit operations, kinetic reactions, and property packages to incorporate into HYSYS simulation

- Learning about oil and gas property simulation, along with phase envelope and fluid property calculations

- Understanding how HYSYS applies to customized reports, extension applications, and oil and gas property applications

- Introducing participants to different types of simulation practices

## Course Schedule:

Day 1

- HYSYS overview and applications

- Fluid and transport properties

- Fluid characterization and fluid package

- Fluid property calculations

- Using HYSYS for oil and gas property simulation

- Thermodynamic selection

Day 2

- Process flow diagrams in HYSYS

- Material and energy balances

- Customized reports

- Extension applications
- Oil and gas property applications

Day 3

- Simulation practices
- Oil, gas, and water separators
- Pump and compressors
- Heat exchangers
- Valves, fittings, and pipelines

Day 4

- Distillation columns
- Simulation practices (Part 2)
- Oil pumping and transportation
- Gas compression plant

Day 5

- Oil stabilization plant
- NGL extraction by mechanical refrigeration
- NGL fractionation plant simulation
- Process optimization