€TRAINING

HYHYS Program, Simulation of Oil & Gas Petrochemical

HYHYS Program, Simulation of Oil & Gas Petrochemical

Introduction:

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.

Course Objectives:

At the end of this course the participants will be able to:

- 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.

Targeted Audience:

- Engineers.
- International Oil and Gas companies staff.
- Anyone with a background in Oil & Gas and HYSYS software.

Course Outlines:

Unit 1: HYSYS Overview And Applications:

- Fluid and transport properties.
- Fluid characterization and fluid package.
- Fluid property calculation.
- Using HYSYS for oil and gas property simulation.
- Thermodynamic selection.
- Explain the Degree of Freedom &HYSYS Uniqueness.
- Understand the purpose of process and process modeling.
- Understand the importance of fluid characterization.
- Explain Basic Equipment in HYSYS: pump, separator, exchanger.

Unit 2: Process Flow Diagrams in HYSYS:

- Material and energy balances.
- Customized reports.
- Extension applications.
- Oil and gas property applications.

Unit 3: Simulation Practices:

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

Unit 4: Distillation Columns:

- Apply simulation chemical reactors.
- Simulation practices.
- Oil pumping and transportation.
- Gas compression plant.

Unit 5: Oil Stabilization Plant:

- NGL extraction by mechanical refrigeration.
- NGL fractionation plant simulation.
- Process optimization.
- Apply dynamic simulation on gas feed plants.