Training - Practice of PRO-II/Provision or HYSYS Simulation Software

PRO2HYS-EN-P | Face-to-face only | 2 days

This course aims to present an overview of the use of the PRO-II/PROVISION or HYSYS software programs

Level
Knowledge

Public
Engineers looking for a practical introduction to simulation of industrial units

Objectives
Attendees will be able to implement the following skills:

- Simulate stationary processes from their unit operations and available thermodynamic data
- Leverage simulation results

Pedagogical & technical resources
Computer-based case studies with analysis of simulation inputs and outputs

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

Complementary informations
The program can be declined under PROII or HYSYS according to the customer's request. For a training course carried out on PROII, the software can be provided from IFP Training with the training . But for HYSYS, the licences of the software should be available from the client's

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

SIMULATION PRINCIPLES & DATA PREPARATION — 0.25 day

Simulation principles: concepts of streams and units.
Getting started with PRO II/PROVISION: start a new simulation or open an existing simulation file, import a keyword input file, export a simulation database.
Presentation of the different menus, ribbon bar buttons, PFD Main Window and PFD palette. Presentation of the input and output files.

Thermodynamic methods: available models, selection criteria.
Supplying required data for components and feed streams: pure components, petroleum pseudo components, analysis data.

OPERATIONS WITH PURE LIQUID-VAPOR EQUILIBRIA 0.25 day

Analysis of different operations with pure components: flash, compression, depressurization, preheating, vaporization, cooling down, condensation.
Practice analysis of two different cryogenic cycles with propane, operating conditions and impact on the efficiency of the process, representation on the enthalpic diagram and validation of the results. Influence of the purity of the propane and impact of a pollution with little quantity of air.

SEPARATION OF HYDROCARBON MIXTURES 0.75 day

Liquid-vapor equilibria of hydrocarbon mixtures:

- Required data for a liquid-vapor equilibrium (flash) simulation.
- Different types of flash specifications: fixed pressure and temperature, bubble point, dew point, etc.
- Practice: hydrocarbon flashes, water-hydrocarbon condensation.

Distillation:

- Required data for the simulation of a distillation column: number of trays, feeds and products, pressure profile, type of condenser and reboiler, etc.
- Different types of specifications - Available parameters.
- Print options: temperature, rate or composition profiles.
- Practice: design of a depropanizer and a draw-off column.

PRACTICE, CASE STUDIES & COMPLEMENTARY TOOLS 0.75 day

By means of numerous exercises, complementary tools are presented: controller, optimizer, case study, calculator, and their role, efficiency and necessary data are studied.
HYSYS practice:

- Natural gas degasolination by different means.
- Cryogenic cycle (flash, compressor, heat exchanger, etc.): determination of the cooling fluid to be implemented in different cases (use of a “controller”).
- Gas expander cycle (compressor, expander, reactor, heat exchanger, etc.): determination of the efficiency in different cases (use of a “calculator”).

PRO-II practice:

- Distillation column: optimization of the feed inlet tray location (use of an “optimizer” or “a case study”). Heat integration.

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