

Process Simulation: Fundamentals - Process Modelling Using UniSim Design



Course Overview

Course number: PDS-4526-VILT

Course length: 2 days

Learn to build, evaluate and optimize steady state process flow sheets using UniSim Design. Learn techniques and shortcuts for efficient use of the program.

The course runs over two days. The course is made up of a series of hands-on workshops using examples from the natural gas processing industry, although the skills learnt can be applied to any model. Each workshop is preceded by an Instructor-guided discussion and demonstration

Course Benefits

- Discover how the key features of UniSim Design allow rapid flow sheet construction and intuitive, bi-directional calculations
- Use the Workbook and Process Flow Diagram (PFD) interfaces for quick and effective modeling
- Customize the Workbook to track additional stream and operating parameters
- Perform auxiliary calculations using the built-in Spreadsheet
- Investigate how templates and sub-flow sheets can streamline and organize simulation efforts
- Explore different means of reporting results

Course Delivery Options

- [Virtual Instructor-Led Training](#) (VILT)
- IMPORTANT – Prior to registration for the e-learning courses (AT, RT, VILT, and VT), you must perform the User Readiness Test. Go to [Asynchronous Training](#), [Recorded Training](#), [Virtual Instructor-Led Training](#), and [Virtual Training Access Requirements](#) to perform this test.

Who Should Take This Course?

- New engineering graduates/technologists who will be using UniSim Design in their daily work
- Process engineers doing process design and optimization projects and studies
- Plant engineers checking plant performance under different operating conditions
- R&D engineers and researchers using UniSim Design for process synthesis

This course is aimed at users with limited experience of UniSim Design.

Prerequisite/Skill Requirements

Prerequisite Course (s)

- None

Required Skills and/or Experience

- None

Desirable Skills and/or Experience

- A background in chemical engineering or industrial chemistry

Course Topics

The following topics are covered

- Getting Started
 - Introduction to UniSim Design. Setting up a first simulation case, flash calculations, utilities and the workbook
- Propane Refrigeration Loop
 - Adding and connecting unit operations. Build a simple flow sheet
- Refrigerated Gas Plant
 - Build a more complex flow sheet, Heat Exchangers and Logical unit operations (Balance, Adjust). Case Studies
- NGL Fractionation Plant
 - Distillation columns in UniSim Design
- Oil Characterization
 - Using UniSim Design's oil environment to characterize oils
- Two Stage Compression
 - Use of Recycle unit operation to converge looped models in steady state
 - Use of Simulation Balance Tool to check heat and material balances
 - Use of Pipe Segment Unit operation
- Sour Gas Treating with DEA
 - Build a simple Contactor & Regenerator model using the Amines fluid package
- Natural Gas Dehydration with TEG
 - Build a simple TEG dehydration system
- Reporting with UniSim Design
 - Explore the different methods of reporting data from UniSim Design

Additional Training

To increase your knowledge and skills, there are additional courses available from Automation College.

For more information and registration, visit
www.honeywellprocess.com/en-US/training.