Process Simulation: Advanced - Process Modelling Using UniSim Design

Course Overview

Course number: PDS-4527-VILT
Course length: 2 days

Learn how to use and apply advanced modeling techniques to enhance existing UniSim Design models.

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

- Use the Column sub-flow sheet to create custom columns, including non-standard configurations such as thermosyphon reboilers
- Obtain equipment parameters for new designs or evaluate the performance of existing equipment with the Sizing and Rating utilities
- Create different types of Reactions available in UniSim Design and attach Reaction Sets to unit operations
- Perform complex calculations on flow sheet variables using the Spreadsheet
- Improve the convergence performance of simulation and troubleshoot common problems

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?

- Process engineers who need advanced skills for more complex modeling tasks
- R&D engineers and researchers using UniSim Design for process synthesis, upgrade or modifications

This course is aimed at users with experience of UniSim Design Steady State modeling.

Prerequisite/Skill Requirements

Prerequisite Course(s)
- None

Required Skills and/or Experience
- PDS-4526 or PDS-4526-VILT

Desirable Skills and/or Experience
- A background in chemical engineering
- Should have modelling experience
- Familiarity with UniSim Design steady state modeling concepts

Course Topics

- Getting Started
  - Build a Turbo Expander steady state model to use as a basis for the rest of the course
- Extensions
  - Learn how to register Extension Unit Ops for use within the model
- Advanced Columns
  - Modify the column sub flow sheet and use the tray sizing utility
- Templates and Sub-Flow sheets
  - Using sub-flow sheets to organize the model, ways to create templates and sub-flow sheets
- Spreadsheets and Case Studies
  - Introduction to spreadsheets and case studies
- Advanced Recycle Operations
  - Advanced topics – backwards propagation, interaction of Recycle block with Adjust operation...
- Troubleshooting
  - Learn steady state troubleshooting techniques
  - Use of Simulation Balance Tool
- Depressuring
  - Introduction to Dynamic Depressuring utility
- Compressor & Pump curves
  - Adding curves to pump & compressor unit operations in steady state
- Reactions
  - Introduction to reactions in UniSim Design
- Rating Heat Exchangers
  - Use of rating mode in the Heat Exchanger
- Automation Introduction
  - Introduction to using OLE Automation with UniSim Design. Controlling a model from Excel using VBA and creation of User Variables
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.