Course Overview

Course number: PDS-4527
Course length: 2 days (EMEA/NALA), 3 days (APAC)

This course provides the ability to use and apply advanced modelling techniques to enhance existing UniSim® Design models. This 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 flowsheet variables using the Spreadsheet.
- Improve the convergence performance of simulation and troubleshoot common problems.
- Learn how to use some preconfigured Excel tools for UniSim Design
- Learn to use the optimization capabilities of UniSim Design

Course Delivery Options

- In-Center Instructor-Led Training.
- On-Site Instructor-Led Training.

Who Should Take This Course?

- Process engineers who need advanced skills for more complex modelling 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 modelling.

Prerequisite/Skill Requirements

Prerequisite Course(s)
- PDS-4526 course or equivalent modelling experience.

Desirable Skills and/or Experience
- Familiarity with UniSim Design or HYSYS® steady state modelling concepts

Course Topics

The following topics are covered

- Getting Started: Build a Turbo expander steady state model to use as a basis for the rest of the course.
- Advanced Columns: Modify the column sub flowsheet and use the tray sizing utility.
- Templates and Sub-Flowsheets: Using sub-flowsheets to organise the model, ways to create templates and sub-flowsheets.
- 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 to check heat and material balances and find modelling errors.
- Excel Tools for UniSim Design
  - Workbook Dump.
  - UniSim Design Stream Reporter.
  - UniSim Excel Interface Tool (USE-IT).
  - UniSim Design Browser.
- Depressuring: Introduction to Dynamic Depressuring Utility.
- Compressor & Pump curves: Adding curves to pump & compressor unit operations in steady state.
- Optimizer: Introduction to the Original Optimizer and the SQP Optimizer and Derivative Utility.
- Reactions: Introduction to reactions in UniSim Design.
- Extensions: Learn how to register Extension Unit Ops for use within the model.

Additional Training

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

For more information and registration, visit www.automationcollege.com