Automation College

Honeywell

# Process Modelling using UniSim Design

## Course Overview

**Course number: 4526**

**Course length: 2 days**

This course provides the ability to build, evaluate and optimise steady state process flowsheets using UniSim® Design. It gives techniques and shortcuts for efficient use of the program.

This course runs over two days and 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 flowsheet construction and intuitive, bi-directional calculations.
- Use the Workbook and Process Flow Diagram (PFD) interfaces for quick and effective modelling.
- Customise the Workbook to track additional stream and operating parameters.
- Perform auxiliary calculations using the built-in Spreadsheet.
- Investigate how templates and sub-flowsheets can streamline and organise simulation efforts.
- Explore different means of reporting results.

## Course Delivery Options

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

## 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 optimisation 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 no or limited experience of UniSim Design.

## Prerequisite/Skill Requirements

**Prerequisite Course(s)**

- 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 flowsheet.
- Refrigerated Gas Plant:
  - Build a more complex flowsheet, Heat Exchangers and Logical unit operations (Balance, Adjust). Case Studies.
- NGL Fractionation Plant:
  - Distillation columns in UniSim Design.
- Oil Characterisation:
  - Using UniSim Design's oil environment to characterise 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 viewing the schedule, please visit www.honeywell.com/tms or contact automationcollege.hpsemea@honeywell.com.**