Course Overview
Course number: PDS-110
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 to build steady state simulations of refining processes.

The course runs over two days and is made up of a series of hands-on workshops using examples from the refining 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
- Use the Optimiser to perform complex, multi-variable optimization

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.
- Refinery 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 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
  - De Pentaniser and De Butaniser:
    - Build simple distillation columns in UniSim Design. Spreadsheets and Templates
  - Oil Characterisation:
    - Using UniSim Design’s oil environment to characterize Oils
  - Pre-Heat Train:
    - Heat Exchangers and Logical unit operations (Balance, Adjust). Case Studies
  - Atmospheric Crude Column:
    - Build an Atmospheric Crude Column
  - Vacuum Tower:
    - Adding side draws and pumps arounds to a column. Tray sizing utility
  - Heat Integration:
    - Export column pump arounds. Use the Recycle unit op to construct looped systems
  - Rating Heat Exchangers:
    - Use of rating mode in the Heat Exchanger.
  - Crude Column Optimisation:
    - Using the UniSim Design optimizer

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.