Course Overview

Course number:  UOP-0002-S
Course length:  5 days

Process Design Fundamentals (includes WBT)

This course delivers practical insights into the principles of process design. It features a review of chemical engineering unit operations, discussion of design and performance characteristics of commonly-used equipment and case studies that deliver a broad perspective of the subject as well as an understanding of industrial engineering practices. Course content includes shortcut techniques, practical approaches to engineering problem solving, “rules-of-thumb” and guidelines that can be put into practice when participants return to their jobs. Teamwork is encouraged through collaboration on exercises, sharing work experiences and leveraging skills and knowledge.

Optionally, the UniSim® process simulator can be incorporated to give students hands-on experience modeling refinery processes. Students use the simulator to apply the principles of thermodynamics, distillation and column design learned during the lecture portion of the class.

Course Benefits

You will acquire the necessary skills and knowledge to:

- Set up and solve heat and material balances
- Systematically assess hydraulic circuits
- Demonstrate competency in line sizing
- Evaluate the effectiveness of existing equipment under new processing conditions
- Generate requirements and equipment data sheets for new equipment
- Critique third party designs

Who Should Take This Course?

Chemical engineers with less than two years of experience in the hydrocarbon processing industries; engineers transferring from allied industries (e.g., chemicals, power, and other industries that employ continuous processing techniques); engineers returning to the workplace who need a refresher on process design principles.

The course will be of particular benefit to those engineers who are responsible for rating the performance of existing equipment and systems at new processing conditions, conducting revamps, determining and specifying equipment, and auditing the work of third party design engineers. Students should have a level of competency commensurate with an undergraduate degree in chemical engineering

Prerequisite/Skill Requirements

Prerequisite Course (s)
- None

Required Skills and/or Experience
- None

Desirable Skills and/or Experience
- None

Note: This course has a Line-Sizing Web-Based Training prerequisite included that must be completed by the registrant prior to the commencement of the course. Details on how to access and complete the web-based training will be sent to the registrant’s email address a minimum of 30 days prior to the commencement of the course.

Course Topics

You will learn.....

- Applied thermodynamics and process modeling
- Multi-component fractionation - process principles and parametric analysis techniques
- Column sizing
- Line sizing/hydraulics
Course Topics
You will learn.....
- Pumps and compressors
- Heat exchangers (shell and tube, air coolers)
- Fired heaters
- Relieving systems

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.