Course Overview

Course number: UOP-0001-S
Course length: 41 days

Engineering Design Seminar

This intensive nine week program gives participants the opportunity to learn the fundamentals of refining process design. Each topic is presented in the context of the design of a refinery process unit or the selection of a specific type of refinery equipment. Seminar sessions are led by UOP process design and equipment design specialists who demonstrate how to apply engineering principles to solve design problems.

Course Benefits

You will acquire the necessary skills and knowledge to:

- Understand the practical applications of basic design engineering principles
- Develop steady state simulations of process flowsheets including understanding design guidelines, generation and use of heat/mass balances, and process optimization
- Understand key criteria involved in the specification of rotating equipment and instrumentation
- Understand key criteria for designing vessels, heat exchangers, piping, relief valves, fractionating columns, and fired heaters
- Explain how process stream properties affect process equipment metallurgy
- Understand content and applications of process flow diagrams (PFDs) and piping and instrument diagrams (P&IDs)

Who Should Take This Course?

The course is designed for refinery or petrochemical plant technical staff who meet the following minimum requirements:

- Two years of experience in the refining or petrochemical industries
- A level of competency commensurate with an undergraduate degree in chemical engineering

English language fluency (speaking and writing)

Prerequisite/Skill Requirements

Prerequisite Course(s)
- None

Required Skills and/or Experience
- None

Desirable Skills and/or Experience
- None

Course Topics

You will learn:

- Compressors
- Corrosion and fouling
- Crude distillation unit design
- Energy systems
- Environmental issues
- Fractionation
- Gravity separation
- Heat exchangers
- Heaters
- Instrumentation
- Line sizing and hydraulics
- Metallurgy
- Operational safety
- Pinch technology
- Process fluid properties
- Process unit design

Course Delivery Options

- In-Center Instructor-Led Training
- On-Site Instructor-Led Training
Course Topics continued

You will learn…

- Pressure vessel and flange ratings
- Process and project engineering
- Pumps
- Refinery business economics
- Relief valves
- Simulation tools for process design
- Steam turbines
- Tray sizing
- Utilities and offsites
- Vacuum distillation unit design
- Vacuum ejectors

Additional Training

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