Shell-and-Tube Heat Exchanger Technology

Shell-and-tube heat exchangers are some of the most widely used industrial heat exchangers. This course describes the characteristics of shell-and-tube heat exchangers compared to other exchanger types and the role of shell-and-tube exchangers within process industries. We also explore the advantages and disadvantages of shell-and-tube heat exchangers to assist with exchanger selection and compare several approaches to modeling the thermal and hydraulic performance of shell-and-tube heat exchangers. Additionally, this course offers an overview of the terminology and standards associated with shell-and-tube exchanger design and construction.

Suggested Participants

This is an introductory course for engineers – novice to expert – interested in shell-and-tube heat exchanger construction and performance.

Outline

I. Introduction
- Tubular Alternatives to Shell-and-Tube Heat Exchangers
- Plate-type Alternatives to Shell-and-Tube Heat Exchangers

II. Shell-and-Tube Heat Exchanger Construction
- Tube Bundles and Heat Exchanger Tubes
- Tubesheets
- Tube to Tubesheet Joints
- Baffles and Support Plates
- Impingement Protection and Shells
- Front Heads
- Rear Heads

III. Shell-and-Tube Exchanger Codes, Standards, and Specifications
- TEMA Standard
- API 660 Standard

IV. Modeling Shell-and-Tube Heat Exchanger Performance
- Predicting Heat Transfer Coefficients
- Overall Solutions

Course duration: Approximately 5 hours

Access: You can access the course for up to 30 days, starting on the date of registration. The course is self-paced and delivered completely online. If you need to exit the course before completion, you will be able to save your progress and return to the course anytime within the 30-day access period.

Course credits: 5 hours (PDH/CEU)

Recommended browser: Google Chrome

HTRI software: ***X****changer Suite*® is not used during this course

Course fee: US$600 (member) or US$850 (non-member)

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