

**Course Fee: US\$650**

This short course moves beyond the fundamentals of thermal design to focus on specific design challenges associated with a range of service types. Presented as a series of case studies, each topic is introduced by the instructor before participants delve into *Xist* to work on solutions which are ultimately discussed amongst the group. The knowledge attained from this short course will allow you to tackle related design challenges in your future work.

Case studies include:

- Viscous shellside coolers
- Feed-effluent exchangers
- Kettle reboilers
- Falling film evaporators

**Suggested Participants**

Experienced *Xist* users who troubleshoot cases and evaluate shell-and-tube exchanger performance

**HTRI Software**

This course will make use of the following HTRI software: *Xchanger Suite*<sup>®</sup> components *Xist*<sup>®</sup> and *Xvib*<sup>®</sup>. All training materials are based on the current software version.

**Course Credits:** 6 hours (PDH/CEU)

**Outline**

- I. Shellside Viscous Cooler
  - *Xist* stream analysis
  - MTD Delta correction factor
  - Design guidelines
- II. Feed-Effluent Heat Exchangers
  - Role and applications
  - Common characteristics
  - Design concerns
- III. Vibration Analysis in Kettle Reboilers
  - Kettle operation
  - HTRI recirculation boiling model (CBM)
  - Vapor blanketing
  - *Xist* tube vibration analysis for kettles
- IV. Falling Film Evaporator
  - Breakdown mechanisms
  - Heat transfer methods and specification in *Xist*
  - New features in *Xist*