

# Waterhammer Training



**Location:** Fauske & Associates, LLC, 16W070 83rd Street, Burr Ridge, IL

**Date & Time:** Thursday, October 26, 2017; 8:00 am - 4:00 pm  
Friday, October 27, 2017; 7:30 am - 3:30 pm

**CEUs:** 1.6 (16 PDH)  
**Price:** \$1,095

## Course Description

Waterhammer (also spelled water hammer) is a well-known pressure pulsation phenomenon experienced in many industries. It can be very destructive, and thus it is important to have a good understanding of the potential transients. This course will cover the fundamentals of the different types of waterhammer, the conditions that lead to highly energetic and dynamic transients, how to evaluate them, and, most importantly, how to design systems to reduce the likelihood of waterhammer.

## Live Demonstrations

The course will include live demonstrations, since each student should not only learn about waterhammer from a book, but also by witnessing it in real life. The demonstrations will provide the necessary understanding of the energy and dynamics of the transients.



## Course Topics

- What is waterhammer
- What causes damage
- How can waterhammer be prevented
- Conditions which set up waterhammer events
- Examples of significant waterhammer events
- Ways to analyze potential waterhammer events
  - Hand calculations for peak pressures
  - Hand calculations for piping loads
  - Method of characteristics
  - Epstein's analytical method
  - Computer codes
- Fundamental considerations while using computer codes for waterhammer analysis\*

## Learning Outcomes

- Understanding the physics behind a waterhammer transient
- Familiarity with different types of waterhammer transients
- Simplified, conservative ways of analyzing waterhammer transients
- Background understanding of more sophisticated methods of analyzing waterhammer
- Methods of identifying vulnerabilities in a system likely to lead to a waterhammer
- Methods of reducing the likelihood or completely eliminating potential waterhammer transients

*For the complete course outline, please click here to go to our website.*

*\*This module is intended to teach the attendee about the use of computer codes for waterhammer analysis. No specific code/program will be covered during the training, but only important aspects of waterhammer computer modeling.*

**For hotel information or to register, please contact:** FAIUniversity@fauske.com  
**Please direct course related questions to Damian Stefanczyk, P.E.,**  
**Director of Thermal Hydraulic Services:** stefanczyk@fauske.com  
**www.fauske.com** † (630) 323-8750 † **info@fauske.com**



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## REGISTRATION FORM

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First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Company Name: \_\_\_\_\_ Position: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Cell: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Payment Method:  Visa  Mastercard  AmEx  Purchase Order  Company Check

Name on Account: \_\_\_\_\_

Account Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Signature authorizing Fauske & Associates, LLC to charge credit card: \_\_\_\_\_

- **Fees must be received prior to course commencement**
- **Hotel accommodations and travel expenses are the responsibility of the participant**
- **Fees include course notes, continental breakfast and lunch**

### Technological/ Education Requirements:

It is recommended that the attendee has a degree in a technical area, such as science or engineering. The course does cover material requiring an understanding of calculus.

CEU Credit Eligibility: FAI is an IACET (International Association for Continuing Education & Training) Authorized Provider. In order to be eligible for CEU credit (1.6 per course), attendees must be present for the duration of the course, score 85% or higher on the course assessment and complete the course evaluation.

Privacy: Fauske & Associates, LLC has a written policy to ensure privacy and confidentiality of participant training records and information. Training records will only be released with the expressed written permission of the participant. The participant record will be released to the participant or designated third party within 14 business days of the request.

Cancellation Policy: Cancellations will be accepted up to two weeks prior to course date.

**Hotel accommodations\* and travel expenses are the responsibility of the participant**

\*A list of area hotels will be provided upon receipt of completed registration form

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