Plumbing System Design Including Water Conservation and Reclaim

April 16–20, 2012
Madison, Wisconsin

Or enroll in three- or two-day options...

Waste, Vent, Water Piping, Plumbing System Forensics
April 16–18, 2012

Pipe and Equipment, Hospital Piping, Green Plumbing, LEED®, Water Reclaim
April 19–20, 2012

Designing sewers, drains, vents, domestic water systems, solar water heating, and water treatment
Interceptors, wastewater reuse, LEED®, and more!

Please route this brochure to colleagues who would also benefit by attending.
Scope of Course

- Practical, fundamental training
- Basic theory of wastes and vents, and stormwater and water piping systems
- Selection of water heaters, water treatment, pumps, interceptors, and other equipment
- Copper and plastic piping, double containment piping, and piping accessories
- Hand-operated valves
- Gas piping
- Backflow prevention measures
- Piping and equipment for hospitals (optional)
- Wastewater reuse—“green” and LEED* (optional)

The speakers will use the latest Wisconsin Plumbing Code for most examples. There will, however, be a discussion of the International Plumbing Code (IPC) at the optional Sunday evening session.

Three Enrollment Options

The sessions on Monday, Tuesday, and Wednesday will focus on waste, vent, water piping, and plumbing system forensics. The sessions Thursday and Friday will address pipe and equipment, hospital piping, green plumbing and more. You can enroll for three, two, or all five days. Please see enrollment form.

Benefits for...

- Plumbing system designers
- Plumbers and contractors
- Code officials
- Building operators
- Equipment salespersons

Earn Recertification Credit

This course qualifies for recertification credit for CPEs and CPDs. For more information, contact the Association for Facilities Engineering (AFE) at 571-203-7171 or the American Society of Plumbing Engineers (ASPE) at 847-296-0002.

Valuable References

You will receive the following references (for the course sections where used), pending their availability from the publisher as of course date:

(first two days)
- Wisconsin Plumbing Code and Training Manuals
- International Plumbing Code (Wednesday session)
- NFPA 54 (gas piping)
- NFPA 99C (hospital piping)

All attendees will receive three-ring binders of speaker handout materials.

Plumber Recertification

Wisconsin and several other states approve this course for plumber CEUs for recertification. If you have questions about your state, call Harold Olsen, program director, 608-262-2403. Please provide a contact phone number for your state if you call.

Note of Appreciation

We acknowledge the help and cooperation of the Plumbing Review Section, Department of Safety and Professional Services.

Past Attendees Say...

"The content is extremely valuable."

"Excellent instructors, handouts, practical examples, and exercises."

"More than worth it—the firsthand information debunks many secondhand myths."

"Before this course, I only knew enough about plumbing design to be dangerous."

"This course was very intense and informative. The speakers were knowledgeable and enthusiastic."

Partial List of Previously Enrolled Organizations

Arnold and O’Sheridan
Chicago Transit Authority
Grissom Air Reserve Base
Grumman/Butkus Associates
Henneman Engineering
Hooper Corporation
Jay R. Smith Manufacturing Company
Kemin Industries, Inc.
Kohler Company
Mead & Hunt, Inc.
Milwaukee County, Wisconsin
Moen, Inc.
Progressive AE
Rohde Brothers, Inc.

Fluid Systems Engineering (FSE)

The UW–Madison, College of Engineering, in cooperation with ASPE, offers a BS degree in civil engineering with an FSE option that includes studies in piping, pumping, heat transfer, and fluid control. For information, contact Professor Jim Park at jpark@wisc.edu. Scholarships and co-op opportunities are available through the UW and ASPE.
Plumbing System Design Including Water Conservation and Reclaim
April 16–20, 2012 in Madison, Wisconsin

Course Outline
Note: Daily schedule includes continental breakfast, midmorning and midafternoon refreshment breaks, and lunch at noon.

Sunday, April 15
Optional Evening Session
The Lowell Center
610 Langdon Street
This session will serve as an engineering refresher for graduate engineers or technicians and as an introduction to some of the basics (that will not be covered later) for those who do not have the fluid engineering background. IPC (International Plumbing Code) examples will be used.

7:00 p.m. Theory of Waste and Vent Pipe Sizing
- Drainage systems
- Traps
- Soil and waste stacks
- Stormwater
- Piping layout suggestions
Harold L. Olsen

9:00 Approximate Adjournment

Monday, April 16
7:45 Registration and Continental Breakfast
The Pyle Center
702 Langdon Street

8:00 Introduction, Course Overview
Harold L. Olsen, Program Director

Waste, Vent, Water Piping, Plumbing System Forensics

8:15 Private Sewage Systems
Plumbing Section
Department of Safety and Professional Services

9:15 Sewers and Drains
Fixtures, Wastes, and Vents
- Waste and vent sizing (Wisconsin Code)
- Fixture diagrams
- Methods of venting

Plumbing Section
Department of Safety and Professional Services

12:00 Lunch

1:00 Wastes and Vents Practice
- Sample system layouts and sizing
- Homework

John Kollman
Plumbing Instructor
Northeast Technical College
Green Bay, Wisconsin

5:30 Adjourn

Tuesday, April 17
7:30 Optional Homework Review

8:00 Sizing Domestic Water Piping Systems
- Sample system sizing
- Homework

John Kollman

12:00 Lunch

1:00 Plumbing System Forensics
Hot Water Circulating Lines and Water Heater Location
Pressure Reducing Valves
Mixing Valves; Scalding
Dry Drains; Branch Connections
Siphonic Roof Drains
Plastic Piping Problems
Ron George
Ron George Design and Consulting Services
Newport, Michigan

5:00 Adjourn/Homework

Wednesday, April 18
7:30 Optional Homework Review

John Kollman

7:45 National Fuel Gas Code Requirements: NFPA 54

Gas Piping
- Pressure options
- Meter location and constraints
- Above-standard pressure customer piping (2 lbs. and greater)
- CSST and copper piping
- Pipe sizing using NFPA 54

Jim Shepherd
Fond du Lac, Wisconsin

9:15 Break

9:30 Water Treatment
- Softeners
- RO units
- Iron removal

Lance Fitzgerald
Commercial Training Manager
Culligan Corporation
Northbrook, Illinois

12:15 Lunch

1:00 Solar Water Heater Selection
Kurt Koepf
Hot Water Products Inc.
McFarland, Wisconsin

2:30 Break

2:45 Converters and Storage Water Heaters
Hot Water Circulating Systems
Domestic Water Booster Systems

Dan Brusewitz
Hydro-Flo Products, Inc.
(Bell & Gossett)
Brookfield, Wisconsin

5:30 Adjourn

Thursday, April 19
Pipe and Equipment, Hospital Piping, Green Plumbing, LEED®, Water Reclaim

8:00 Copper Tubing
- Types of tubing
- Pressure and temperature ratings
- Fittings: types and assembly
- Codes and standards
- Expansion and compensation
- Fluid friction charts or tables
- Erosion and corrosion factors
- Uses (systems)

Wayne Grabowski
Northbrook, Wisconsin

9:45 Break

10:00 Plastic Piping for Waste, Vent, Drains, Sewers, and Water (Interior and Exterior)
- Types of tubing
- Pressure and temperature ratings
- Fittings: types and assembly
- Codes and standards
- Valves
- Expansion and compensation
- Fluid friction charts or tables
- Erosion and corrosion factors
- Uses (systems)

Vince Arter
Spears Manufacturing Company
Bolingbrook, Illinois

12:00 Lunch

1:00 Manual Valves (Iron, Brass)
- Various types of valves
- Pressure and temperature ratings (WOG, other)
- Codes and standards
- Materials
- Recommended uses
- Leak detection

Wayne Grabowski

2:45 Break

3:00 Double Containment Piping
- Types of piping
- Pressure and temperature ratings
- Weights and sizes
- Fittings: types and assembly
- Codes and standards
- Expansion and compensation
- Leak detection
- Uses (systems)

Jamie Heinz
Spears Manufacturing Company
Colgate, Wisconsin

4:30 Sump and Ejector Pumps
- Types
- Pump curves
- Selection and applications
- Sump sizes and accessories

Bill Kanetske
Weil Pump Company
Cedarburg, Wisconsin

5:30 Adjourn
Four Easy Ways to Enroll

Internet: http://epd.engr.wisc.edu/webN114

Phone: 800-462-0876 or 608-262-1299 (TDD 265-2370)

Mail to: Engineering Registration
The Pyle Center, Dept. 106
702 Langdon Street
Madison, Wisconsin 53706

Fax: 800-442-4214 or 608-265-3448

Course Information
Please enroll me in Course #N114 in Madison, Wisconsin:

- Plumbing System Design Including Water Conservation and Reclamation
  April 16−20, 2012 Fee: $1595
- Waste, Vent, Water Piping, Plumbing System Forensics
  April 16−18, 2012 Fee: $1395 (Includes NFPA 54, Wisconsin and IPC codes and training manuals)
- Pipe and Equipment, Hospital Piping, Green Plumbing, LEED®, Water Reclaim
  April 19−20, 2012 Fee: $895
- I will attend the optional Sunday evening session.

Personal Information (Please print clearly.)

Name ____________________________
Title ______________________________
Company __________________________
Address ____________________________
City/State/Zip ________________________
Phone (_____) ____________________ Fax (_____) __________________
E-mail ____________________________

Program Associate: Harold L. Olsen

Additional Enrollees

Name ____________________________
Title ______________________________
E-mail ____________________________
Name ____________________________
Title ______________________________
E-mail ____________________________

Billing Information

Bill my company __________________ For O.A.P.D. __________________
Payable in U.S. funds to UW − Madison __________________

Cardholder’s Name ____________________________ Card No. ____________
Expires ____________________________

UW# ____________________________ From mailer panel.

Friday, April 20

Note: You may choose between the Health Care Facilities and “Green” optional sessions.

(Optional Track 1—Health Care Facilities)

Medical Gas and Vacuum Systems

8:00 Source Equipment
- Bulk oxygen
- Medical air compressors
- Medical vacuum producers
- Instrument air systems

Piping Distribution Systems, Manifolds
- Valves, piping, outlets, and alarm systems
- Inspection, verification, and documentation

12:00 Lunch

1:00 Design Techniques/Strategies
- Common problems in systems
- Construction techniques
- Shut down/interruption planning
- Pipe sizing exercise

Tom Spremo/Sarah Thomson
Purely Med Gas
Milwaukee, Wisconsin

4:00 Adjournment

(Optional Track 2—Green Sessions)

Wastewater Reuse: Green and LEED®

7:45 Wastewater Reuse
Wisconsin Plumbing Code Com. 81 & 82, Other Related Code Sections
- The study of reuse: flow, loads, water balance, and storage conditions

Designing a Sample Water Reuse System

State Registration and Inspection

Plumbing Section
Department of Safety and Professional Services

11:00 Calculating and Planning for LEED® Points for Plumbing Projects
Sarah Balz, Tony Schumacher
Affiliated Engineers
Madison, Wisconsin

12:00 Lunch

1:00 Interceptors: Grease, Oil, and Other

Plumbing Section
Department of Safety and Professional Services

Cross Contamination/Backflow Prevention
- ASSE valve types

Plumbing Section
Department of Safety and Professional Services

4:00 Final Adjournment

General Information

Fee Covers Notebook, course materials and references, break refreshments, lunches and certificate.

Cancellation If you cannot attend, please notify us by April 9, and we will refund your fee. Cancellations received after this date and no-shows are subject to a $150 administrative fee. You may enroll a substitute at any time before the course starts.

Location The Pyle Center, 702 Langdon Street, Madison, WI. Phone messages: 608-262-1122.

Accommodations We have reserved a block of rooms (rates starting at $89) at the Lowell Center, 610 Langdon Street, Madison, WI. We have reserved a block of rooms (rates starting at $115) at the Campus Inn, 601 Langdon Street, Madison, WI. Phone messages: 608-262-1122.

We have reserved a block of rooms (rates starting at $89) at the Lowell Center, 610 Langdon Street, Madison, WI. To reserve a room, call 866-301-1753 or 608-256-2621 and indicate that you will be attending this course under group code PLUMBSYS. Room requests made later than March 18 will be subject to availability.

We have reserved a block of rooms (rates starting at $115) at the Campus Inn, 601 Langdon Street, Madison, WI. To reserve a room, call 800-589-6285 or 608-257-4391 and indicate that you will be attending this course under group code 115824. Room requests made later than March 25 will be subject to availability.

Course Changes We reserve the right to alter the course schedule and substitute speakers when necessary.

Earn Continuing Education Credits Attend April 16−20, 2012 and earn 4.0 CEU/40 PDH. Attend April 16−18 and earn 2.4 CEU/24 PDH. Attend April 19−20 and earn 1.6 CEU/16 PDH. Please see enrollment form.

Need to Know More?
Call toll free 800-462-0876 and ask for Program Director: Harold L. Olsen
Program Associate: Sandy Krentz
Or e-mail custserv@epd.engr.wisc.edu