

ASPE - Chicago Chapter
Education Committee
1918 North Larrabee St.
Chicago, Illinois 60614



Chicago Chapter

Presents a 16 week course
in Two Semesters

“Plumbing Engineering Basics”

The course will be conveniently located at the offices of:

OWP/P
111 West Washington Street
Suite 1900
Chicago, Illinois

Instructor:

Julius Ballanco, P.E.
Member Chicago ASPE Chapter
ASPE National President

Semester 1 Classes start March 19, 2008
Semester 2 Classes Start October 1, 2008

Classes will be held from Wednesdays 5:30 PM through 8:00 PM

The course has been assigned 2.0 CEU's per Semester

Certificate of Completion
will be issued by ASPE Chicago Chapter
upon successfully passing each semester of this course

This is a graded course.

Course fees
\$455.00 **per Semester** for ASPE members
\$640.00 **per Semester** for non members

Questions can be answered by:
Dan Fagan, OWP/P. 312-960-8301

This course is designed to provide the knowledge necessary to perform the design of basic plumbing systems for buildings. It is intended primarily for individuals involved in the Architectural, Engineering and Construction industries, but assumes no prior knowledge regarding plumbing engineering. The course will cover basic plumbing fixtures, equipment, materials, systems, codes and the principles of engineering on which they are based. A full listing of the topics to be covered is indicated in the class schedule inside this announcement

Materials provided as part of your course fee will be:

“*Engineered Plumbing Design*”
Alfred E. Steele, PE

International Plumbing Code

Julius Ballanco, P.E.

Julius Ballanco, P.E., is President of JB Engineering and Code Consulting, P.C. His firm specializes in code and standard consulting in the areas of life safety, fire protection, plumbing and mechanical engineering. Before establishing this firm Mr. Ballanco was head of Plumbing and Mechanical Engineering for Building Official and Code Administrators (BOCA) International, Inc. He is a well-known lecturer, having instructed over 1,000 seminars. Mr. Ballanco is also a monthly columnist in both *Plumbing & Mechanical* and *PM Engineer* magazines. He has authored the BOCA National Plumbing Code Commentary and the Plumbing of Residential Fire Sprinklers and has also co-authored the Illustrated National Plumbing Code Design Manual. Mr. Ballanco serves on many national standard committees, including ANSI/ASME, NSF, and ASSE. He is the ASPE National President and is an active liaison to the many National Plumbing Codes. A graduate of Stevens Institute of Technology, he is both a Registered Professional Engineer and Licensed Master Plumber. Mr. Ballanco is a longtime ASPE Chicago Chapter member.

Because of space limitations, class size is limited to only 20 students. It is anticipated that the class will be full, therefore enrollment will be on first come, first serve basis. Registration in the class will not be guaranteed until registration form **and** full payment are received.

Deadline for Spring enrollment March 10, 2008
Deadline for Fall enrollment September 22, 2008

Plumbing Engineering Design Basics - Class Schedule

Semester 1-Spring 2008		Semester 2-Fall 2008	
<p>I. Week 1- March 19, 2008</p> <p>A. Introduction</p> <p>B. Drainage Piping Materials and Joining Methods</p> <p>C. Plumbing Fixture/Chase Requirements</p> <p>D. Roof Drain & Floor Drain Types/Installation</p>	<p>V. Week 5 – April 16, 2008</p> <p>A. Sanitary and Vent Systems, Continued</p> <ul style="list-style-type: none"> ▪ Horizontal Pipe Slope and Sizing ▪ Soil and Waste Stacks ▪ Stack Sizing ▪ Cleanouts ▪ Sample Problems ▪ Traps ▪ Indirect waste 	<p>I. Week 1- October 1, 2008</p> <p>A. Introduction</p> <p>B. Water Piping Materials and Joining Methods</p> <p>C. Basic Properties of Water</p> <ul style="list-style-type: none"> ▪ Weight/Head ▪ Static Pressure ▪ Residual Pressure ▪ Density 	<p>V. Week 5 – October 29, 2008</p> <p>A. Domestic Water Heating, Continued</p> <ul style="list-style-type: none"> ▪ Demand Calculations ▪ Sample Problem ▪ Types of Water Heaters ▪ Domestic Hot Water Return ▪ Insulation
<p>II. Week 2 – March 26, 2008</p> <p>A. Flow in sloping drains</p> <ul style="list-style-type: none"> ▪ Manning Formula ▪ Open Channel Flow ▪ Sample Problems <p>B. Storm Water Systems</p> <ul style="list-style-type: none"> ▪ Roof Drain Locations ▪ Overflow Drains ▪ Roof Slopes 	<p>VI. Week 6 – April 23, 2008</p> <p>A. Sanitary and Vent Systems, Continued</p> <ul style="list-style-type: none"> ▪ Pneumatic Pressures in Sanitary Drainage Systems ▪ Standard Venting ▪ Standard Vent Sizing ▪ Vent Stacks ▪ Alternative Venting ▪ Sample Problems 	<p>II. Week 2 – October 8, 2008</p> <p>B. Water Systems</p> <ul style="list-style-type: none"> ▪ Friction Loss ▪ Velocity of Flow ▪ Velocity Head ▪ Reynolds Number ▪ Darcy's Equation ▪ Hazen-Williams Formula ▪ Sample Problems 	<p>VI. Week 6. – November 5, 2008</p> <p>A. Pumps and Pump Curves</p> <ul style="list-style-type: none"> ▪ Centrifugal Pumps ▪ Pump Affinity Laws ▪ Pump Curves ▪ Suction Head ▪ Parallel Pumping ▪ Series Pumping ▪ Sample Problems
<p>III. Week 3 – April 2, 2008</p> <p>A. Storm Water Systems, Continued</p> <ul style="list-style-type: none"> ▪ Storm Drain Sizing Criteria ▪ Horizontal vs. Vertical Piping ▪ Rainfall Rates ▪ Gutters ▪ Site Drainage ▪ Retention ▪ Sample Problems 	<p>VII. Week 7 – April 30, 2008</p> <p>A. Sanitary and Vent Systems, Continued</p> <ul style="list-style-type: none"> ▪ Riser Diagrams ▪ Relief Vents ▪ Suds Vents ▪ Offset Venting <p>B. Sewage Ejectors and Sump Pumps</p> <p>Discussion of the types of pumps available and sizing parameters used</p> <ul style="list-style-type: none"> ▪ When a Pump is Required ▪ Types of Pumps ▪ Pump & Pit Sizing ▪ Level Controls 	<p>III. Week 3 – October 15, 2008</p> <p>C. Domestic Water Systems Design</p> <ul style="list-style-type: none"> ▪ Equivalent Length of Pipe ▪ Domestic Water Fixture Units ▪ Hunter's Curve ▪ Pipe Erosion ▪ Water Hammer ▪ System Sizing ▪ Riser Diagrams ▪ Sample Problems 	<p>VII. Week 7 – November 12, 2008</p> <p>A. Backflow Preventers</p> <ul style="list-style-type: none"> ▪ Why Required ▪ Air Gaps ▪ Break Tanks ▪ Vacuum Breakers ▪ Check Valves ▪ Double Check Valves ▪ Reduced Pressure Type ▪ Where to Use Each Type ▪ Hazard Identification <p>B. Valves</p> <ul style="list-style-type: none"> ▪ Gate ▪ Ball ▪ Butterfly ▪ Globe ▪ Check ▪ Balancing
<p>IV. Week 4 – April 9, 2008</p> <p>A. Review Take-Home Quiz on Weeks 1 through 3</p> <p>B. Sanitary and Vent Systems</p> <ul style="list-style-type: none"> ▪ Drainage piping definitions ▪ Gravity Flow in Stacks ▪ Drainage Fixture Units ▪ Horizontal Pipe Slope and Sizing 	<p>VIII. Week 8 – May 7, 2008</p> <p>A. Review Take-Home Quiz on Weeks 4 through 7</p> <p>B. Open Discussion</p>	<p>IV. Week 4 – October 22, 2008</p> <p>A. Review Take Home Quiz Covering Weeks 1 through 3</p> <p>B. Domestic Water Heating</p> <ul style="list-style-type: none"> ▪ BTU's/Watts ▪ Hot Water Demand by Fixture ▪ Hot Water Usage Temperature ▪ Mixed Water 	<p>VIII. Week 8 – November 19, 2008</p> <p>A. Review Take Home Quiz Covering Weeks 4 through 7</p> <p>B. Open Discussion</p>

COURSE REGISTRATION:

Name: _____

Company: _____

Address: _____

City: _____ St: _____ Zip: _____

Phone: _____ Email: _____

Address (Home): _____

City: _____ St: _____ Zip: _____

Phone: _____

COURSE FEE(Per Semester):

ASPE member \$455.00 _____

Non- member*\$640.00 _____

* INCLUDES A ONE YEAR ASPE MEMBERSHIP DUES PAID BY CHICAGO CHAPTER

ASPE Membership Number _____

Make checks payable to: ASPE - Chicago Chapter

Send Registration Form and check to:

ASPE Education Committee
1918 North Larrabee St.
Chicago, IL 60614

Registration Deadline: Semester 1-March 10, 2008
Semester 2-September 22, 2008