



Total Pump Training Class Registration

Our Total Pump Training is designed to provide you with practical knowledge and skills needed to address common concerns involving pumps. Our Total Pump Training course is an in depth look at common pump applications, including selection, operation, troubleshooting, and maintenance. Individuals in the pump and piping system industries will find this to be a valuable course for learning the importance of proper pump operation and typical behavior in application. Each attendee is given a course handbook and a copy of the book *Pump Characteristics and Applications*, by Mike Volk, P.E. in order to maximize the value of your learning experience.

TRAINING OUTLINE

INTRODUCTION

Basic Definitions of Pumps
Pressure & Head
Classification of Pumps

POSITIVE DISPLACEMENT PUMPS

Introduction to Positive Displacement (P.D.) Pumps
Selection Criteria for P.D. Pumps

HYDRAULICS, SELECTION & CURVES

Pump Capacity
Head - Explanation of Elements Of System Head
Performance Curves - How to Read & Understand Them
Horsepower & Efficiency
How to Size Motors
NPSH & Cavitation

ADVANCED HYDRAULIC CONSIDERATIONS

Specific Speed & Suction Specific Speed
Affinity Laws
System Head Curves
Parallel & Series Operation
Performance Optimization
Over-Sizing Pumps
Pumping Viscous Liquids
Piping Layout
Field Testing Pumps

ENERGY CONSERVATION IN PUMP SELECTION

Selecting Pumps To Minimize Energy
Life Cycle Pump Costs

SEALING SYSTEMS

Stuffing Box/Packing Assembly
Mechanical Seals
Sealless Pumps - Magnetic Drive & Canned Motor

OTHER TOPICS

Impellers
Wear Rings
Thrust & Thrust Balance
Pump Configuration Types
ANSI & API Pump Standards
Minimum Flow
Suction Recirculation
Pump Installation & Startup
Maintenance
Trouble Shooting
Root Cause Failure Analysis
Pump Repair



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Class Registration

To register: call (800) 786-8545 or email register@fluidfundamentals.com

Course fee: The early registration fee of \$1295 includes the three-day seminar, course workbook and companion book *Pump Characteristics and Applications*. The registration fee on the day of the class is \$1395.

Cancellation Policy: If notification is received at least two weeks prior to the start of the course, credit may be granted to a later seminar date. No refunds are available for cancellations made less than 30 days prior to the start of the scheduled course. If for any reason we are required to cancel a class, our liability is limited to the return of the registration fee.

Guarantee: Fluid Fundamentals Training offers the highest quality training available. If you are dissatisfied for any reason, notify the instructor prior to the end of the first day and you may withdraw and receive a 100% tuition refund.

Class size: Limited to 40.

Continuing Education Unit (CEU): Completion of the Piping System Fundamentals Training is credited as 2 CEU's.

Courses are offered on the following schedule:

Philadelphia, PA April 6-8 Houston, TX May 11-13

Method of Payment (Check one):

Visa MC Amex Purchase Order* Check (Payable to Engineered Software)

Card Number: _____ Exp. Date: _____ Security Code: _____

Name On Card: _____

Signature: _____

Attendee Information **

Name: _____ Email: _____

Company: _____ Title: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Please **Mail** this form with payment to:

Fluid Fundamentals Training
4529 Intelco Loop SE, Suite A
Lacey, WA 98503-5941

For your convenience you may also:

Fax to: (360) 412-0672
E-mail to: register@fluidfundamentals.com
Phone Registration is available from
7am to 3:30pm PDT: (800) 786-8545

* Invoice to be paid prior to beginning of class.

** For additional attendees, a second sheet has been provided. If you are registering more than five people please make a copy of the additional attendee registration sheet and use it to complete all attendee registrations.



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Additional Attendees

Attendee Information

Name:			Email:		
Company:			Title:		
Address:					
City:	State:	Zip:			
Phone:	Fax:				

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Name:			Email:		
Company:			Title:		
Address:					
City:	State:	Zip:			
Phone:	Fax:				

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Name:			Email:		
Company:			Title:		
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Phone:	Fax:				

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Company:			Title:		
Address:					
City:	State:	Zip:			
Phone:	Fax:				