Hydraulics for Pipeline Engineers

This course may assist in meeting requirements for DOT Operator Certification.

2.7 CEUs

Length: 3.5 Days

Covers basic pipeline hydraulics for engineers and design problems to include calculations for hydraulic gradients, pipe selection, telescoping, grade tapering, injection, and stripping. Discusses equipment and methods of surge control.

Participants should plan on bringing a laptop or tablet capable of running Excel or an equivalent spreadsheet App with the ability to do advanced math functions.

Course Content

INTRODUCTION TO PIPELINE HYDRAULICS
FLUID CHARACTERISTICS AND PIPELINE DESIGN CODES
BASIC HYDRAULICS EQUATIONS AND FRICTION LOSS EQUATIONS
ENERGY AND SURGE CONSIDERATIONS AND SYSTEM CONTROL
HYDRAULIC GRADIENT
PIPE SELECTION AND PUMPS

Recommended For

Engineers new to the pipeline industry or those seeking practical knowledge. Also for electrical and civil engineers working on pipelines. Participants must be able to perform engineering-level computations.

Included with Course

• Catered lunch daily; beverages and snacks provided
• Course materials including instructor presentations
• Use of scientific calculator and measurement tools
• Provided books: Cameron Hydraulic Data and Crane Technical Paper 410

Advanced Petroleum Measurement (third of three levels)
Completion and Workover
Elementary Drilling—Offshore
Elementary Drilling—Onshore
Field Handling of Natural Gas—Emphasis on Engineering
Field Handling of Natural Gas—Emphasis on Operations
Fundamentals of Petroleum Measurement (first of three levels)

Hydraulics for Pipeline Engineers

Hydraulics for Pipeline Operators

Intermediate Petroleum Measurement (second of three levels)

LNG: Basics of Liquefied Natural Gas
Mass Measurement of Hydrocarbon Fluids
Natural Gas Measurement—Fundamentals
Natural Gas Measurement—Design/Application/Inspection
Natural Gas Measurement—Electronic Flow Measurement
Natural Gas Measurement—Sampling and Analysis

Petroleum Fundamentals
Pipeline Technology
Plant Processing of Natural Gas—Emphasis on Engineering
Plant Processing of Natural Gas—Emphasis on Operations
Production Technology
Rig School™—Introduction to Offshore Operations

Enrollment Information

Your company is invited to participate in these training programs. For additional information, contact—

PETEX Learning and Assessment Center
The University of Texas
4702 North Sam Houston Parkway West, Suite 800
Houston, TX  77086
Tel:  800.687.7052
or  281.397.2440
FAX:  281.397.2441
Email:  plach@www.utexas.edu

December, 2014
PETEX Instructor-Led Pipeline Courses

**Pipeline Technology**

10.9 CEUs, 30 CEs for Texas Landmen
Length: 14.5 Days or 3 weeks (may be taken in weekly modules)

Covers pipeline design, construction, operations, maintenance, and management. May be taken in one-week modules.

Course Content

1st Week—Pipeline Design (3.8 CEUs, 5 days)
- PIPELINE REGULATIONS
- PIPELINE RIGHTS-OF-WAY AND CONTRACTS
- ELECTRIC PRIME MOVERS
- PIPELINE HYDRAULICS
- ANALYSIS AND CONTROL OF SURGES
- MAINLINE DESIGN AND CONSTRUCTION
- STATION DESIGN AND CONSTRUCTION
- SELECTION OF PIPELINE PUMPS

2nd Week—Operations (3.8 CEUs, 5 days)
- PRODUCT TERMINALS
- SUPERVISORY CONTROL SYSTEMS
- DRAG REDUCING AGENTS
- METERS AND MEASUREMENT
- POWER OPTIMIZATION
- ECONOMICS OF PIPELINE TRANSPORTATION
- MAINLINE TANKS
- MAINLINE MATERIALS OF CONSTRUCTION

3rd Week—Maintenance (3.3 CEUs, 4.5 days)
- LINE MAINTENANCE
- CORROSION
- MAINTENANCE EQUIPMENT
- LEAK DETECTION
- COMPONENTS OF AUTOMATIC CONTROLS
- VALVE MAINTENANCE
- WELDING
- EMERGENCY RESPONSE

**Recommended For**

Engineers new to the pipeline industry or those in special areas seeking a broader view of pipeline operations. Also serves as a refresher course for pipeline engineers.

**Included with Course**

- Catered lunch daily; beverages and snacks provided
- Industry field trips
- Course materials including instructor presentations for each session attended
- Use of scientific calculator and measurement tools
- Recommended book: *A Dictionary for the Oil and Gas Industry*, 2nd ed.

**Hydraulics for Pipeline Operators**

This course may assist in meeting requirements for DOT Operator Certification.

1.9 CEUs
Length: 2.5 Days

Gives concentrated training on pipeline hydraulics.

Course Content

- INTRODUCTION TO ENERGY CONCEPTS
- FLUID PROPERTIES EFFECTS ON HYDRAULICS
- PIPES AND STEADY STATE FLOW
- HYDRAULIC GRADIENTS AND PROBLEMS
- FUNDAMENTAL VALVE CONCEPTS
- PUMPS AND PUMP OPERATION
- STATION OPERATIONS AND MULTIPLE STATION OPERATIONS

**Recommended For**

Oil movement center operators.

**Included with Course**

- Catered lunch daily; beverages and snacks provided
- Course materials including instructor presentations

**Recommended Book**

*A Dictionary for the Oil and Gas Industry*, 2nd ed.

A best-selling resource for all industry personnel. This helpful reference contains over 12,000 definitions of terms used in petroleum geology, exploration, drilling, production, pipelining, processing, refining, accounting, and marketing. Features over 540 2-color illustrations and an easy-to-use format. Also includes contact information for industry associations and key government agencies and lists of common abbreviations, SI units, and metric equivalents. 2011, 336 pp.

For more info about PETEX, check out our Web site at [www.utexas.edu/ce/petex](http://www.utexas.edu/ce/petex)