



Course Name	Pipelines
Credit Hours	2 Hours
Instructor(s)	Ralph Stevens
Fee	\$29.00

Course Description

This course offers a foundational overview of pipelines in U.S. water distribution systems. It is designed for professionals involved in installation, maintenance, and system operations. This course covers the basic operation of these systems. It presents the common installation methods, materials, and a selection of regulatory standards.

Learning Objectives

At the end of this class, students will be able to:

- Explain the general function of pipelines within a distribution system.
- Discuss various aspects of installation, including material selection and joining techniques.
- Identify the types of pipelines and discuss their general operation.
- Understand techniques commonly used to monitor and manage pipelines in the U.S.
- Explain the role of pressure in water distribution.
- Identify important maintenance that must be performed on pipelines.
- Discuss common environmental concerns related to the installation and operation of pipelines.
- Understand the regulations that may affect pipeline construction, installation, and maintenance (and where to find those regulations).
- Identify important safety concerns and practices.

Equipment Requirements

You must have an active, working internet connection to access this course online, as well as a platform to access the internet, such as a computer, tablet, or phone. All popular web browsers are supported, including Google Chrome, Mozilla Firefox, Safari, and Opera. No specialized software, speaker, microphone, or web camera is required.

Schedule and Location

This course is available online at any time at www.AYPOTech.com. Upon enrolling in the course, students will have access for 365 days or until the agency-issued course expiration date, whichever comes first. After the access expiration date, the student may re-activate their course

if the course approval has not expired. If they do not re-activate, the course will be removed from the student's account and any progress in the course will be lost. Before the access expiration date, the student may sign in and out of the course as many times as needed to complete the course.

Student Support

Both general and technical support is available to the student before, during, and after taking the course online. Students have access to general customer support via phone, chat, and email. Students have access to the course instructor via email. All questions, concerns, and comments received will be responded to within one business day.

Participation/Interactivity Verification

Timed Logs - Per our company's record retention policy, each student's every log-in, log-out, and lesson/assessment completion time is tracked and retained as part of the student record.

Review Questions - After each section of text, students must answer a review question. Students cannot progress in the course until the question between sections has been answered correctly.

Global Timer - Students will not get credit until they spend a minimum of 120 active minutes total in the course.

Identity Verification

Unique Username/Password - Each student that wants to complete a training course with us must create an account by registering a unique personal email address and password. The student must enter this unique identifier every time they take a break from the course.

Assessment Details

Review Questions - The student must successfully answer all review questions between sections to get credit for the course. If their first response is incorrect, students will have to try again until they choose the correct answer.

Pipelines Timed Outline

Section	Title	Questions	Minutes
1	Introduction		0.8
	a. Modern Improvements		1.1
	b. Safe Distribution		2.6
	1. Objectives		0.9
	a. Lesson Structure		0.6
	Review Question	1	1.0
2	Pipeline Composition		1.6
	a. Materials		0.7
	1. Metals		2.7
	2. Reinforced Concrete Pipes (RCP)		2.0
	3. Fiberglass		1.7
	4. Plastic (PEX PVC CPVC)		0.4
	a. PVC – Polyvinyl Chloride		0.7
	5. Types		0.5
	6. Water Quality Requirements		0.8
	a. Table 1: Federal Water Quality Rules		1.9
	b. Table 2: Water Quality Index		0.9
	c. Potable Water Pipelines and Networks (PWPN)		0.7
	Review Question	1	1.0
3	Installation		0.4
	a. Planning		1.9
	1. Route Site Alignment and Soil Review		1.1
	b. Staging and Placement		1.3
	1. Environmental and Safety Review		1.2
	c. Pipe Installation		0.7
	1. Methods of Installation		0.3
	a. Trench Schematics and Markings Setup		1.1
	b. Open-Cut Trenching		0.4
	c. Pipe Jacking		1.1
	d. Microtunneling		1.8
	e. Horizontal Directional Drilling (HDD)		1.6
f. Restoration		0.7	
Review Question	2	2.0	
4	Joining		0.5
	a. Thermal Heat Fusion Methods		1.8
	1. Flanged Joint		0.5
	b. Mechanical Coupling		0.9
	1. Gluing or Solvent Cement		0.6
	2. Threaded Connection		0.7
	a. Rivet or Bolt		0.5
	b. O-ring and Gasket		0.4
	c. Camlock		0.3
	d. Bell and Spigot		0.4
Review Question	2	2.0	

5	General Operations		0.5
	a. Water Sourcing		0.6
	1. State Example: Cheyenne Wyoming		1.7
	b. Water Treatment		0.4
	1. Process Overview		0.2
	a. Pre-Treatment		0.8
	2. Coagulation and Flocculation		0.9
	3. Sedimentation		0.8
	4. Filtration		0.6
	5. Disinfection		0.6
	6. Post-Treatment		0.5
	a. Pumps Transport and Storage		0.9
	Review Question	2	2.0
6	General Regulations Overview		2.0
	a. Drinking Water Quality: The EPA		2.5
	1. Requirements		1.1
	a. Water Pollution		1.0
Review Question	2	2.0	
7	Pressure		1.6
	a. Pumps		1.1
	b. Variable Fluctuation		0.7
	1. Backflow		0.9
	2. Water Supply Systems		0.7
	a. Pipeline Elevation		1.2
	b. Pipeline Design		0.5
	c. Demand and Usage Patterns		0.6
	d. Best Practices		0.6
Review Question	2	2.0	
8	Monitoring and Management		2.7
	a. Control		0.8
	1. Early Detection		0.8
	2. Pipe Condition		1.3
	a. Performance and Efficiency		1.2
	b. State Example: Watertown New York		0.7
	c. Emergency Response Plans		2.0
Review Question	2	2.0	
9	Maintenance		1.1
	a. Regular Maintenance		0.8
	1. Visual Inspections		1.1
	2. Testing		0.5
	3. General Tasks		4.7
	a. Scheduled Maintenance		2.4
	b. Corrective Maintenance		0.9
	c. Adaptive Maintenance		2.4
	d. Preventative Maintenance		0.9
	e. Emergency Maintenance		0.6
	1. Resource: EPA Guidebooks		0.9
a. Troubleshooting		1.9	
Review Question	2	2.0	

10	Safety		2.2
	a. OSHA Compliance and Jurisdiction		2.2
	1. Safety Management Plan		1.5
	2. Safety Training		0.4
	a. Hazard Awareness		1.5
	b. Personal Protective Equipment		0.9
	1. Mechanical and Electrical Safety		0.5
	a. Electrical Safety		0.3
	b. Sensors and Shock		0.8
	c. Insulation and Grounding		0.4
	d. Lockout/Tagout		1.0
	e. Overhead Power Lines		1.2
	2. Consumer Safety and Emergency Planning		0.6
	a. Contamination		2.0
Review Question	2	2.0	
11	Environmental Concerns		0.6
	a. Habitat Disruption		1.2
	1. Water Source Depletion		0.9
	a. Soil Erosion and Sedimentation		0.9
	2. Reducing Environmental Impact		0.2
	a. Regulatory Safeguards		1.0
	b. Proactive Planning by Water Suppliers		1.3
	3. Planning		1.1
	a. Responsibility		1.3
Review Question	1	1.0	
12	Conclusion		3.3
	Review Question	1	1.0
		Totals:	20
		Student Minimum Time Required:	138.8
			120.0



Attendance Policy

At Your Pace Online's online courses are available anytime to any licensee with a computer and Internet connection. The courses are self-paced and can be completed over multiple sessions. The licensee must complete all multiple-choice questions between sections correctly to get credit for the course. If their first response is incorrect, students will have to try again until they choose the correct answer. After the course is successfully completed, the user must affirm they are the one who completed the course and verify that their registration information is correct.

Attendance Record Form

We store all of our student records in a database. We can supply attendance reports to the Board upon request.