Course Name	**Piping Systems Part 1**
Credit Hours	3 Hours
Instructor(s)	Jerry Durham
Fee	$39.00

Course Description

This course introduces operators to piping systems and familiarizes them with the larger components that make piping systems function, including metallic and nonmetallic piping, tubing, and hoses.

Learning Objectives

After completing this course, the licensee should be able to:
- Describe what typical piping systems consist of and explain their importance to plant operations.
- Identify common valves and fittings, pipe hangers and supports
- Describe the effects of temperature on piping system components and explain the need for insulation.
- List routine maintenance considerations for piping systems.
- Explain how metal pipes are sized and designated according to standard codes and schedules.
- Identify the characteristics of metals that make them suitable for a variety of piping applications.
- Discuss the major considerations involved in the maintenance of metal piping.
- Describe the different methods of connecting sections of metal pipe, including bell-and-spigot joints, welded, soldered, or brazed joints, screwed or threaded joints, and flanged joints.
- Name the basic nonmetallic piping materials and discuss the advantages and disadvantages of each.
- Identify the different forms of concrete pipe.
- Discuss the limitations of plastic pipe.
- Explain the difference between thermoplastic and thermosetting plastic pipe.
- Describe how to join sections of nonmetallic pipe, and how to maintain them.
- Compare piping and tubing and list the major advantages of tubing.
- Describe the methods of cutting, bending, and joining sections of tubing.
- List the main types of metal tubing and describe the kinds of industrial applications in which they are used.
- List the main types of plastic tubing and describe the kinds of industrial applications in which they are used.

- Explain how hoses are sized, classified, and con- structed.
- Define basic hose terminology.
- Discuss the respective advantages of metallic hose, nonmetallic hose, and reinforced nonmetallic hose.
- Describe the common types of hose couplings used in industrial service.
- List the primary maintenance requirements of hoses.

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 180 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.

Piping Systems Part 1 Timed Syllabus

Section	Topic	Questions	Minutes*
	Introduction to Piping Systems		
1	Piping Systems	1	4.5
2	Fluids	1	1.8
3	Protecting Steam Lines	2	6.5
4	Keeping Fluids Clean and Moving	2	7.4
5	Piping System Maintenance	1	3.7
6	Valves and Fittings	1	3.4
7	Pipe Hangers and Supports	1	2.1
8	Temperature Effects	1	2.5
9	Piping Insulation	1	3.6
10	Typical Piping Systems	1	2.8
11	Maintenance Considerations	2	4.4
	Metal Piping		
12	Pipes	1	2.4
13	Pipe Schedules and Other Pipe Codes	1	4.2
14	Types of Systems	1	4.0
15	Metal Piping	1	4.9
16	Pipe-Manufacturing Methods	1	2.9
17	Behavior of Fluids in Piping	1	3.2
18	Piping Applications	1	4.7
19	Maintenance Considerations	1	4.2
20	Joining Pipe	3	11.0
	Nonmetallic Piping		
21	Nonmetallic Piping Materials	1	2.1
22	Concrete Pipe	3	9.4
23	Asbestos-Cement Pipe	1	3.1
24	Plastic Pipe	1	6.2
25	Limitations of Plastic Pipe	1	2.2
26	Joining Plastic Pipe	2	7.8
27	Maintaining Plastic Pipe	1	1.9
28	Glass Pipe	1	3.9
29	Maintenance Requirements	1	1.8
	Tubing		
30	Tubing	2	8.4
31	Advantages of Tubing	2	5.3
32	Tube Joining	1	7.7
33	Types of Tubing	2	3.8
34	Tubing Applications	2	7.2
35	Plastic Tubing	1	2.4

36	Other Applications and Maintenance	1	3.5
	Hoses		
37	Hoses	1	3.2
38	Codes and Sizes	1	2.9
39	Hose Classifications	1	1.4
40	Hose Terminology	5	10.4
41	Reinforced Nonmetallic Hose	1	6.0
42	Nonmetallic Hose	1	3.1
43	Metallic Hose	1	3.3
44	Hose Couplings	3	8.3
45	Maintenance	1	2.7
	Totals:	**63**	**202.2**
	Student Minimum Time Required:		**180**