Steam, Sprinkler and Pipe Fitting

Program Length:

900 Total Hours
200 Hours Lecture
500 Hours Shop
200 Hours Externship

Program Description:

The program is designed to help students gain knowledge in pipe fitting, steam fitting and sprinkler fitting processes. Students will gain experience and training that include industrial and personal safety, safe pipe fitting operation and practices, pipe fabrication and valve installation, blue print reading, interpretation of engineering plans, and instruction in basic shop math. This program will teach students how to create a resume and help them build up a proper skillset for the industry. This includes written and verbal communications, resume writing, interviewing, budgeting personal finances, and job search and readiness strategies. After graduation, a student can start working as a pipe fitter, plumber, steam fitter, pipe fabricator, perform jobs related to general and boiler pipe fitting, and installation and testing of systems.

Steam, Sprinkler and Pipe Fitting Program

Course/Number		Clock Hours		
Lesson	Title	Lecture	Shop	Clock Hours
PFT001	Introduction to Pipe fitting and tools	15	5	20
PFT002	Pipe Welding and Basic Equipment Safety	20	25	45
PFT003	Oxyfuel Cutting and MIG Welding	25	15	40
PFT004	Blueprinting Reading and Shop Math	70	0	70
PFT005	Valves	6	50	56
PFT006	Pipe Fabrication, Welding and Insulation	20	175	195
PFT007	Rigging, Pipefitting Standards and Specifications	5	30	35
PFT008	Pipe Accessories and System Testing	5	70	75
PFT009	Special Piping and Advanced Welding	10	110	120
PFT010	Stress Relieving and Aligning	20	10	30
PFT011	Interviewing Skills, Teamwork & Management	4	10	14
PFT012	Externship	0	200	200
Total:		200	700	900

Program Subjects:

1. Introduction to Pipefitting and Tools
2. Pipe Welding Basics and Equipment Safety
3. MIG Welding and Oxyfuel Cutting

4. Blueprint Reading and Shop Math
5. Valves
6. Pipe Fabrication, Welding and Installation
7. Rigging, Pipefitting Standards and Specifications
8. Pipe Accessories and System Testing
9. Special Piping and Advanced Welding
10. Stress Relieving and Aligning
11. Interviewing Skills, Teamwork & Management Communications
12. Externship

Certification:

A diploma of completion will be given to each student upon completing the Program. This diploma will be used to show a perspective employer evidence of program completion and the skills attained for successful work in the Steam, Sprinkler and Pipe Fitting industry.

Course Descriptions – Steam, Sprinkler and Pipe Fitting

PFT001 - Introduction to Pipefitting and Tools
In this course, students will learn the usage and basic concept of pipe fitting. Students will gain knowledge of the pipe fitting industry, basic pipe fitting tools, skills and operations. Students will also learn general safety in the use of various hand and power tools. Students will gain a general idea of the types of career paths that they may be able to pursue with this knowledge.

PFT002 - Pipe Welding Basics and Equipment Safety
In this course, students will learn pipe welding basics and equipment safety. They will learn about welding, different types of piping equipment, tool handling and proper techniques to reduce the risk of injury. Student will learn about the hazards and safety procedures governing the use of ladders and scaffolds. Student will also be introduced safety precautions and operations of motorized equipment. The knowledge gained in this course will provide a safe working environment and a solid foundation for the pipe fitters' success in the workplace.

PFT003 - MIG Welding and Oxyfuel Cutting
Students will learn the basics of the Oxyfuel cutting, MIG welding, different types of piping systems and the differences between systems. They will understand the setting up, lightning and using of oxyfuel cutting equipment. Students will learn about the different types of piping systems and how to identify and describe them. Students will get an understanding of thermal expansion and pipe insulation. They will also gain knowledge in how to operate the MIG welding machines and how to weld on a flat surface. After completing this course, a student will be able to identify normal piping systems, perform basic MIG welding tasks and operate the Oxyfuel cutting tools. This knowledge and skills gained in this course will help to form a solid foundation for moving forward in the completion of their course work.

PFT004 - Blueprint Reading and Shop Math
In this course, students will learn about blueprint reading and shop math. By gaining the knowledge of shop math, understanding key terminology, and performing base knowledge experiments, the students will begin to formulate a foundation for pipe fitting. Blueprint reading is an important

piece to becoming a professional pipe fitter. Students will learn how to accurately read and interpret a blueprint layout in order to properly achieve such goals as tasked. While applying such previously learned things as shop math a student will compound that learning by being able to asses drawing scales and dimensions. Students will also learn computer drawings and special views along with other important skill sets to becoming a proficient blueprint reader in their profession.
Prerequisite: PFT001, PFT002

PFT005 - Valves
In this course, students will learn about the valves. As one of the most important parts in pipe fitting jobs, a student should know about their properties, uses and installation methods, and storage and handling processes. Students will learn how to identify different types of valves and know how to assemble and install them. Students will learn how to package O-rings in a valve and how to troubleshoot and maintain various types of valves. This training will be valuable and necessary in any pipe fitter's career.
Prerequisite: PFT004

PFT006 - Pipe Fabrication, Welding and Installation
In this course, the students will learn about pipe fabrication, welding and installation processes. Students will be introduced to the different types of basic and advanced pipe fabrication. They will learn how operate pipe cutting and fabrication equipment and modify the materials to the required scales properly. They will also learn about underground and above ground pipe installation methods. In addition, they will learn about the fabrication for specialty bends and intersections. Pipe welding procedures will be introduced, and the students will learn techniques and practice Stick and TIG welding on pipes. The knowledge gained in this course will provide help in the future work and make students able to fabricate and install a pipe system on their own.
Prerequisite: PFT004

PFT007 - Rigging, Pipefitting Standards and Specifications
In this course, students will learn about rigging, pipefitting standards and specifications. They will learn about the use and inspection of basic equipment and the hardware used in rigging. Students will also be taught about the hazards and safety rules of the rigging process. They will learn about the process of rigging and lifting pipes. In addition, students will learn to describe pipefitting standards, codes and specifications. Knowledge gained in this course will provide a general concept of the rigging process and the pipefitting standards, codes and specifications which will be needed in the workplace.
Prerequisite: PFT004

PFT008 – Pipe Accessories and System Testing
In this course, students will learn concepts of pipe accessories and testing procedures of different pipe systems. They will learn about such things as excavations, field routing, how to secure work areas and determine field run specifications. They will learn how to identify, select and install pipe

hangers and supporters. In addition, they will learn to perform various testing procedures. The knowledge gained in this course will provide students a good testing skill, make them understand the necessity and methods to do the system testing. This would be an important part of work in their future careers.
Prerequisite: PFT004, PFT005, PFT006, PFT007

PFT009 - Special Piping and Advanced Welding
In this course, students will learn special piping and advanced welding applications, including special materials and fabrication processes. They will learn to describe the various specialty devices that are used in pipelines and the various methods of assembling special pipes. Students will gain an understanding of hot taps and steam traps. In addition, they will learn about the use of TIG or Stick weld to weld different pipes with different positions. The knowledge gained in this course would help them deal with specific tasks in their future careers.
Prerequisite: PFT004, PFT005, PFT006, PFT007

PFT010 - Stress Relieving and Aligning
Stress is an important property in the pipes. Students taking this course will learn about the effect of Stress during the assembling process and how to relieve it. They will learn how to calculate the stress and relieve stress which is higher than expected. Students will learn about the alignment procedure and how to resolve misalignment problems. Students will learn about how to align the pipes and place them in order. They will also be introduced to basic information for supervisory roles in pipefitting. The knowledge gained in this course will provide skills that prepare them for advanced roles in the workplace.

PFT011 – Interviewing Skills, Teamwork & Management Communications
Students will learn how to create and maintain a professional resume along with an appropriate cover letter. Students will acquire a working knowledge of interviewing skills, teamwork and management communications to help them secure employment in an entry level position as a pipe fitting technician. PTTI Students will be prepared to work professionally and communicate effectively upon completion of this course.

PFT012 - Externship

Students will acquire working skills on the job as a component of their education and hands-on training at the PTT School. Emphasis will be placed on applying skills learned, working well with other employees, teamwork, and helping companies become more productive, higher quality and increased quality standards of work.

Prerequisite: PFT011