

**STATE OF CONNECTICUT METAL  
PLUMBING APPRENTICESHIP  
INFORMATION PACKET ©**

CTECS ADULT EDUCATION APPRENTICESHIP PROGRAM DEPARTMENT; CTECS

# Connecticut Technical Education and Career System

## PLUMBING APPRENTICESHIP INFORMATION PACKET

Coursework in this packet align to the CT-DOL Related Instruction Requirements for the following apprenticeship classifications:

P-2 Plumbing Mechanic

J-2 Pump Servicer and Installer

J-4 Lawn Sprinkler Installer and Maintainer

P-6 Sewer, Storm and Water Lines Installer

P-8 Gasoline Tank Installer and Repairer

## **Concerning related classroom instruction, each apprentice student is expected:**

- To purchase the textbooks required for each course
- To complete all instructor assigned quizzes and exams as well as any academic reinforcement activities.

## **Student Responsibility Enrollment and Attendance:**

- Students are held responsible for making informed enrollment decisions and for knowledge of and compliance with CTECS policies and procedures, current printed class schedule as well as special registration instructions which may be issued on a semester-by-semester basis.

## **Tuition and Fees Information:**

### **Apprentice Students**

- Registration fee and Technology fee of \$50.00 (**non-refundable**) per semester per school due at registration
- Tuition of \$325.00 per course (can be prorated downward for courses of less than 36 hours) payable prior to the completion of the student's 1<sup>st</sup> class attended.

### **DEFINITION OF APPRENTICE STUDENT (All criteria below must be satisfied):**

- Must be registered with the State Labor Department, Office of Apprenticeship Training
- Possesses a current and valid apprentice card prior to the 1<sup>st</sup> class session – current and valid is defined as an apprentice card that meets all of the following:
  1. The card is for the student's current employer;
  2. The card has an expiration date of 6/30/ of the subsequent year;
  3. The card is signed by Labor Department Apprentice Program Manager.
- Be enrolled in a class that is part of his/her apprenticeship trade curriculum

### **Extension Students:**

- Registration fee and Technology fee of \$50.00 (non-refundable) per semester per school due at registration
- Tuition of \$350.00 per 36 hours of instruction (will be prorated for courses of more or less than 36 hours) payable prior to the completion of the student's 1<sup>st</sup> class attended.

### **Online Students:**

- **A \$20.00 Convenience Fee will be added to normal tuition rates. Students are responsible for technology to access content (see minimum requirements below).**

## **Minimum Technology Requirements and Guidelines for Online Coursework:**

- When participating in distance education courses, it is vital to consider the technology needed in order to have a successful course. We recommend that you meet the technical requirements below when attending online programming:
- A computer (desktop/laptop/ Chromebooks) that is less than 3 years old will work.

- Speakers/headphones/earbuds for listening to audio or videos presented in courses.
- **Webcams are required**, and must be on and pointed at the student during class. (There is background blurring technology to uphold privacy that may be utilized)
  - Failure to abide by this will result in removal from class!

**Attendance Requirements:**

Based on 3-hour class sessions, the following is a list of total hours in a course and the maximum number of allowed absences (by number of classes) prior to denial of credit:

<u>Total hours in classes</u>	<u>Maximum absences</u>	<u>Total hours in classes</u>	<u>Maximum absences</u>
1 - 9	0	61 - 90	3
10 - 30	1	91 - 120	4
31 - 60	2		

**Excessive tardiness and/or early departures will be addressed on an individual basis and may cause denial of credit; example being marked tardy for 3- 1-hour incidents will equate to an absence.**

**Employers have the right to verify their employee's attendance in a program.**

**NOTE: A minimum grade of 75% is necessary to pass each course.**

All trade area content is based on a strong mathematical foundation. For this reason the baseline for transfer credit needs to be set to a higher standard, as well as being recent. Basic Math transfer credit may be awarded with a minimum of an '85' average completed in a comparable course, and taken within the last five years from date request for credit is submitted. All communications will need to be forwarded through the apprentice school supervisor at the local school. For perusal of waiver, please provide the apprentice school supervisor with the following:

- Transcripts detailing grades earned in the course, showing a minimum proficiency level of an '85' or better.
- Course description from institution listed on transcripts.

The following section, Apprentice Responsibilities, is taken from the **State of Connecticut-Apprentice Handbook & Progress Report**, which is given to each apprentice at the beginning of their training by the Office of Apprenticeship Training, Connecticut State Labor Department.

Apprentice Responsibilities:

1. Work safely.
2. **Avoid absenteeism and tardiness at work and at school.**
3. **Attend and participate in related instruction and maintain the highest possible grades.**
4. Be involved and show dedication to your training (both on the job and in the classroom).
5. Keep track of your training hours, (either in the form of work records or logbook) and advise your supervisor of any deficiencies in your apprenticeship training.
6. Show dedication and interest in learning the trade.
7. Show respect to the skilled journeypersons training and supervising you.
8. Comply with the provisions of the Apprentice Agreement.
9. Follow your sponsor's written work rules and policies.
10. You must be accompanied by a journeyperson while on the job site.

**Regional Apprenticeship Representatives  
Office of Apprenticeship Training  
Department of Labor  
860-263-6085**

**Contact information and region assigned:**

**Region 1: Larry Satchell, [larry.satchell@ct.gov](mailto:larry.satchell@ct.gov)**

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**Region 2: Owen Golding, [owen.golding@ct.gov](mailto:owen.golding@ct.gov)**

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**Region 3: Gina Knox, [gina.knox@ct.gov](mailto:gina.knox@ct.gov)**

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**Region 4: Keri Valente, [Keri.Valenti@ct.gov](mailto:Keri.Valenti@ct.gov)**

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**Region 5: Isaiah Curtis, [Isaiah.curtis@ct.gov](mailto:Isaiah.curtis@ct.gov)**

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**Region 6: Nicholas Blardo, [Nicholas.Blardo@ct.gov](mailto:Nicholas.Blardo@ct.gov)**

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**Towns and Cities by Regional DOL Rep located on the following page:**

Region 1	Region 2	Region 3	Region 4	Region 5		Region 6
Larry Satchell	Owen Golding	Gina Knox	Keri Valente	Isaiah Curtis		Nicholas Blardo
<a href="mailto:Larry.Satchell@ct.gov">Larry.Satchell@ct.gov</a>	<a href="mailto:Owen.Golding@ct.gov">Owen.Golding@ct.gov</a>	<a href="mailto:Gina.Knox@ct.gov">Gina.Knox@ct.gov</a>	<a href="mailto:Keri.Valente@ct.gov">Keri.Valente@ct.gov</a>	<a href="mailto:Isaiah.Curtis@ct.gov">Isaiah.Curtis@ct.gov</a>		<a href="mailto:Nicholas.Blardo@ct.gov">Nicholas.Blardo@ct.gov</a>
Berlin	Avon	Bridgeport	Branford	Amston	Niantic	Ansonia
Bolton	Bantam	Darien	Clinton	Andover	North Franklin	Beacon Falls
East Granby	Bethlehem	Easton	Cromwell	Ashford	North Grosvenordale	Bethany
East Hartford	Bloomfield	Fairfield	Durham	Baltic	North Stonington	Bethel
East Windsor	Bridgewater	Greenwich	East Haven	Bozrah	North Windham	Bristol
Ellington	Burlington	Milford	Guilford	Brooklyn	Norwich	Brookfield
Enfield	Canaan	Monroe	Hamden	Canterbury	Oakdale	Cheshire
Glastonbury	Canton	New Canaan	Killingworth	Centerbrook	Old Lyme	Danbury
Granby	Collinsville	Norwalk	Madison	Central Village	Old Saybrook	Derby
Hartford	Cornwall Bridge	Orange	Middlefield	Chaplin	Pawcatuck	Middlebury
Manchester	East Canaan	Redding	Middletown	Chester	Pomfret Center	Naugatuck
Meriden	East Hartland	Shelton	New Haven	Cobalt	Preston	New Britain
Somers	Farmington	Stamford	Newington	Colchester	Sterling	Newton
South Windsor	Forestville	Stratford	North Branford	Coventry	Stonington	Oxford
Stafford	Goshen	Trumbull	North Haven	Danielson	Storrs	Plainville
Suffield	Harwinton	West Haven	Portland	Dayville	Thompson	Prospect
Tolland	Kent	Weston	Rocky Hill	Deep River	Uncasville	Ridgefield
Vernon	Litchfield	Westport	Wallingford	East Haddam	Voluntown	Seymour
Waterbury	Marbledale	Wilton	Wethersfield	East Hampton	Waterford	Southbury
Windsor	Morris		Woodbridge	East Lyme	Westbrook	Southington
Windsor Locks	New Fairfield			Eastford	Willimantic	Terryville
	New Hartford			Essex	Willington	Wolcott
	New Milford			Gales Ferry	Woodstock	
	Northfield			Griswold	Yantic	
	Oakville			Grosvenordale		
	Plymouth			Groton		
	Salisbury			Haddam		
	Sharon			Hebron		
	Sherman			Higganum		
	Simsbury			Killingly		
	Thomaston			Lebanon		
	Torrington			Ledyard		
	Unionville			Lisbon		
	Warren			Lyme		
	Washington Depot			Mansfield		
	Watertown			Marlborough		
	West Hartford			Montville		
	West Simsbury			Moodus		
	Winchester			Moosup		
	Winsted			Mystic		
	Woodbury			New London		

## Department of Consumer Protection

### **Plumbing & Piping Licenses: Licenses Expire annually: October 31st**

#### **Section 20-330 of the Connecticut General Statutes**

"Plumbing and piping work" means the installation, repair, replacement, alteration or maintenance of gas, water and associated fixtures, laboratory equipment, sanitary equipment, other than subsurface sewage disposal systems, fire prevention apparatus, all water systems for human usage, sewage treatment facilities and all associated fittings within a building and shall include lateral storm and sanitary lines from buildings to the mains, swimming pools and pumping equipment, and shall include making connections to back flow prevention devices, and shall include low voltage wiring, not exceeding twenty-four volts, used within a lawn sprinkler system, but on and after July 1, 1984, shall not include solar work, except for the repair of those portions of a solar hot water heating system which include the basic domestic hot water tank and the tie-in to the potable water system and on and after April 1, 1989, shall not

include the installation, repair, replacement, alteration or maintenance of fire prevention apparatus within a structure, except for standpipes which are not connected to sprinkler systems.

"Irrigation work" means making the connections to back flow prevention devices, and low voltage wiring, not exceeding twenty-four volts, used within a lawn sprinkler system.

"Solar work" means the installation, repair, replacement, alteration or maintenance of an active, passive or hybrid solar hot water heating system.

#### **P-1 Contractor Unlimited**

The holder of this license may perform all plumbing and piping work as defined in Section 20-330 of the General Statutes.

#### **P-2 Unlimited Journeyman**

The holder of this license may do the same work as the P-1 licensee, but only while in the employ of a contractor licensed for such work.

#### **P-7 Contractor (Limited to Sewer, Storm and Water Lines)**

The holder of this license may perform the installation, replacement, alteration, or repair of sewer lines, storm water lines, water lines, and services. This license DOES NOT permit any work on septic tank systems or inside a structure.

#### **P-6 Journeyman (Limited to Sewer, Storm and Water Lines)**

The holder of this license may do the same work as the P-7 licensee, but only while in the employ of a contractor licensed for such work.

#### **P-9 Contractor -**

The holder of this license may perform the installation or repair of gasoline tanks and piping & pumping equipment.

#### **P-8 Journeyman -**

The holder of this license may do the same work as the P-9 licensee, but only while in the employ of a contractor licensed for such work.

#### **J-1 Contractor (Limited to Water Pump and Water Conditioning Equipment)**

The holder of this license may perform the installation or repair of water pumps, water conditioning equipment and related piping and equipment from the supply of a water well to the main shut-off valve which shall be within three feet of the supply tank. Installation and repair of water conditioning equipment piping shall include making the connection from and to the existing water line.

#### **J-2 Journeyman (Limited to Water Pump and Water Conditioning Equipment)**

The holder of this license may perform the same work as the J-1 licensee, but only while in the employ of a contractor licensed for such work.



Plumbing Apprenticeship Program Course  
Sequence Sheets listed on the following  
pages:

**EFFECTIVE JANUARY 1, 2008**  
**P-2 PLUMBING APPRENTICESHIP**  
**COURSE SEQUENCE AND PREREQUISITES**

Related Instruction- 720 Hours

OJT - 8000 Hours

Courses	Course number	Semester	Course Length	Prerequisites
<b>FIRST YEAR COURSES:</b>				
Basic Math Computations	A0001	1	36 Hours	
Blueprint Reading	A0031	1	36 Hours	
Intro to Plumbing	A0700	2	36 Hours	
OSHA 30	A0099	2	36 Hours	
Plumbing Math	A0014	2	36 Hours	A0001
<b>SECOND YEAR COURSES:</b>				
Brazing, Cutting and Metallurgy	A2113	1	36 Hours	
Drain Waste Vent I	A0706	1	36 Hours	
Drain Waste Vent II	A0746	2	36 Hours	A0706
Gasoline Tank, Piping and Pump	A0749	2	36 Hours	
Sewer, Storm and Water Lines	A0754	2	36 Hours	
<b>THIRD YEAR COURSES:</b>				
Water Supplies	A0705	1	36 Hours	
Wells, Pumps and Piping I	A0750	1	36 Hours	
Plumbing Code Part I	A0711	2	36 Hours	
Fixtures, Appliances and Installation	A0708	2	36 Hours	
Wells, Pumps and Piping II	A0751	2	36 Hours	A0750
<b>FOURTH YEAR COURSES:</b>				
Water Treatment	A0752	1	36 Hours	
International Mechanical Code	A0729	1	36 Hours	
Special Piping	A0709	2	36 Hours	
Plumbing Code Part II	A0741	2	36 Hours	A0711
Related Codes and Standards	A0730	2	36 hours	

**J-2 WELL PUMPS & PIPING APPRENTICESHIP**  
**COURSE SEQUENCE AND PREREQUISITES**

Related Instruction- 288 Hours

OJT - 4000 Hours

<b>COURSES</b>	<b>Course number</b>	<b>Semeste</b>	<b>Course Length</b>
<b>FIRST YEAR COURSES:</b>			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Wells, Pumps and Piping I	A0750	2	36 Hours
<b>SECOND YEAR COURSES:</b>			
Wells, Pumps and Piping II	A0751	1	36 Hours
Water Treatment	A0752	1	36 Hours
Water Supply	A0705	2	36 Hours
Plumbing Code II	A0741	2	36 Hours

**P-6 SEWER STORM & WATER APPRENTICESHIP**  
**COURSE SEQUENCE AND PREREQUISITES**

Related Instruction- 180 Hours

OJT - 2000 Hours

<b>COURSES</b>	<b>Course number</b>	<b>Semester</b>	<b>Course Length</b>
<b>FIRST YEAR COURSES:</b>			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Sewer, Storm and Water Lines	A0754	2	36 Hours
Plumbing Code II	A0741	2	36 Hours

**P-8 GASOLINE TANK PIPING APPRENTICESHIP**  
**COURSE SEQUENCE AND PREREQUISITES**

**Related Instruction- 144 Hours**

**OJT - 2000 Hours**

<b>COURSES</b>	<b>Course number</b>	<b>Semester</b>	<b>Course Length</b>
<b>FIRST YEAR COURSES:</b>			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Gasoline Tank, Piping and Pump	A0749	2	36 Hours

**J-4 LAWN SPRINKLER INSTALLER AND MAINTAINER APPRENTICESHIP**  
**COURSE SEQUENCE AND PREREQUISITES**

**Related Instruction- 144 Hours**

**OJT - 2000 Hours**

<b>COURSES</b>	<b>Course number</b>	<b>Semester</b>	<b>Course Length</b>
<b>FIRST YEAR COURSES:</b>			
Basic Math Computations	A0001	1	36 Hours
Blueprint Reading	A0031	1	36 Hours
Plumbing Math	A0014	2	36 Hours
Water Supply	A0705	2	36 Hours

**P-2 PLUMBING APPRENTICESHIP  
COURSE SEQUENCE AND PREREQUISITES**

**P-2 Plumbing Curriculum Requirements for Apprentices registered for classes *before* the start of the Spring 2008 semester**

**Related Instruction- 576 Hours**

**OJT - 8000 Hours**

<b>COURSES</b>	<b>Course number</b>	<b>Semester</b>	<b>Course Length</b>
<b>FIRST YEAR COURSES:</b>			
Basic Math Computations	A0001	1	36 Hours
Business Math	A0007	1	36 Hours
OSHA 30	A0099	2	36 Hours
Gas Heating Systems	A0728	2	36 Hours
<b>SECOND YEAR COURSES:</b>			
Blueprint Reading	A0031	1	36 Hours
Science I	A0703	1	36 Hours
Plumbing Blueprint Reading	A0036	2	36 Hours
Drain-Waste-Vent and Design Systems	A0706	2	36 Hours
<b>THIRD YEAR COURSES:</b>			
Science II	A0704	1	36 Hours
Water Supplies	A0705	1	36 Hours
Fixtures, Appliances and Installation	A0708	2	36 Hours
Basic Electricity	A0710	2	36 Hours
<b>FOURTH YEAR COURSES:</b>			
Special Piping and Installation	A0709	1	36 Hours
Plumbing Code Part I	A0711	1	36 Hours
Plumbing Code Part II	A0741	2	36 Hours
Heating Code	A0729	2	36 hours

**Related Instruction:**

- **Old curriculum 576 Hours**
  - **Note: Old coursework is no longer being offered. Grandfathered apprentices will need to abide by current standards and coursework**

**New curriculum 720 Hours**

**Connecticut Technical High School System**

**P-2 Plumbing Apprenticeship**

**Revised curriculum crossover chart**

**Related Instruction:**

- **Old curriculum 576 Hours**
  - **Note: Old coursework is no longer being offered. Grandfathered apprentices will need to abide by current standards and coursework**
- **New curriculum 720 Hours**

OLD COURSES	Course number	NEW COURSES	Course number
Basic Math Computations	A0001	Basic Math Computations	A0001
Business Math	A0007	None	
OSHA 30	A0099	OSHA 30	A0099
Basic Electricity	A0710	None	
Blueprint Reading	A0031	Blueprint Reading	A0031
Science I	A0703	None	
Science II	A0704	None	
Plumbing Blueprint Reading	A0036	None	
Drain-Waste-Vent and Design Systems*	A0706	Drain-Waste-Vent I	A0706
Special Piping and Installation	A0709	Special Piping and Installation	A0709
Water Supplies	A0705	Water Supplies	A0705
Fixtures, Appliances and Installation	A0708	Fixtures, Appliances and Installation	A0708
Gas Heating Systems	A0728	None	
Plumbing Code Part I	A0711	Plumbing Code Part I	A0711
Plumbing Code Part II	A0741	Plumbing Code Part II	A0741
International Mechanical Code	A0729	International Mechanical Code	A0729

**\* Note: Grandfathered plumbing apprentices needing Drain Waste Vent and Design from the old curriculum will need to take both Drain-Waste-Vent I and Drain Waste Vent II from the new curriculum.**

**Mandatory: In addition to core curriculum, Grandfathered Apprentices will need to successfully complete:**

Intro to Plumbing	A0700
Plumbing Math	A0014
Brazing, Cutting and Metallurgy	A2113
Drain Waste Vent II	A0746
Gasoline Tank, Piping and Pump	A0749
Wells, Pumps and Piping I	A0750
Wells, Pumps and Piping II	A0751
Water Treatment	A0752
Related Codes and Standards	A0730

**When substituting new courses for the dropped old courses, the grandfather apprentices must include the following courses:**

<b><u>Related Codes and Standards</u></b>	A0730
<b><u>Plumbing Math</u></b>	A0014
<b><u>Drain Waste Vent II</u></b>	A0746

## Course Outlines

**NOTE: Each apprentice student is expected to complete all instructor assigned quizzes and exams as well as any academic reinforcement activities.**

**A minimum grade of 75% is necessary to pass each course.**

**Course: Basic Math Computations A0001 36 Hours**

- A. Computations Using Real Numbers
- B. Computations Using Fractions
- C. Computations Using Decimal Fractions
- D. Base, Rate, and Portion
- E. Computation of Area and Volume
- F. Units of Measurements

**Course: Blueprint Reading A0031 36 Hours**

- A. Application of Building Codes and Standards
- B. Introduction to Blueprint Reading
- C. Alphabet of Lines and Symbols
- D. Orthographic Projection Drawings
- E. Construction Dimensions and Construction Materials
- F. Reading Plot Plans and Contour Maps
- G. Footings, Foundations and Floor Blueprint
- H. Structural Steel, Framing Blueprints
- I. Plumbing System Blueprints
- J. H.V.A.C. System Blueprints
- K. Electrical Systems Blueprints

**Course: Introduction to Plumbing A0700 36 Hours**

- A. The Plumbing Trade
- B. Job Site Safety
- C. Plumbing Math
- D. Plumbing Materials
- E. Plumbing Tools and Equipment

**Course: OSHA-30****A0099****36 Hours**

- A. Introduction to OSHA – 2 hours
- B. Managing Safety and Health – 2 hours
- C. OSHA Focus Four Hazards – 6 hours
  - a. (1) Falls (minimum one hour and 15 minutes)
  - b. (2) Electrocution
  - c. (3) Struck-By (e.g., falling objects, trucks, cranes)
  - d. (4) Caught-In or Between (e.g., trench hazards, equipment)
- D. Personal Protective and Lifesaving Equipment – 2 hours
- E. Health Hazards in Construction – 2 hours
- F. Stairways and Ladders – 1 hour.
- G. Electives - 12 hours
  - a. Concrete and Masonry Construction
  - b. Confined Space Entry
  - c. Cranes, Derricks, Hoists, Elevators, & Conveyors
  - d. Ergonomics
  - e. Excavations
  - f. Fire Protection and Prevention
  - g. Materials Handling, Storage, Use and Disposal
  - h. Motor Vehicles, Mechanized Equipment and Marine Operations; Rollover Protective Structures and Overhead Protection; and Signs, Signals and Barricades
  - i. Powered Industrial Vehicles
  - j. Safety and Health Programs
  - k. Scaffolds
  - l. Steel Erection
  - m. Tools - Hand and Power
  - n. Welding and Cutting

**Course: Plumbing Math****A0014****36 Hours**

- A. Basic Fundamental
- B. Pipe Length Calculations
- C. Volumes, Pressures and Capacities
- D. Physics

**Course: Brazing, Cutting and Metallurgy****A2113****36 Hours**

- A. Brazing, Braze Welding & Soldering
- B. Cutting Operations
- C. Pipe Welding
- D. Welding Metallurgy
- E. Metal Identification
- F. Weldability of Carbon & Alloy Steels
- G. Weldability of Tool Steels and Cast Iron
- H. Weldability of Stainless Steel
- I. Weldability of Nonferrous Metals
- J. Distortion Control
- K. Materials & Fabrication Standards & Codes



<b>Course: Drain, Waste and Vent I</b>	<b>A0706</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Joining, Installing and Support Pipe</li> <li>B. Sanitary Drainage, Vent and Storm Water Drainage</li> </ul>		
<b>Course: Drain, Waste and Vent II</b>	<b>A0746</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Sizing Sanitary Drainage and Vent Piping</li> <li>B. Plumbing Traps</li> </ul>		
<b>Course: Gasoline Tank, Piping and Pump</b>	<b>A0749</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Installation of Underground Liquid Storage Systems</li> <li>B. Installation of Aboveground Storage Systems for Motor Vehicle Fueling</li> <li>C. Testing Electrical Continuity</li> </ul>		
<b>Course: Sewer, Storm and Water Lines</b>	<b>A0754</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. General Installation Methods</li> <li>B. Concrete Pipe Installation</li> <li>C. Ductile Pipe Installation</li> </ul>		
<b>Course: Water Supply</b>	<b>A0705</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Sizing Water Supply Piping</li> <li>B. Protecting the Potable Water Supply</li> <li>C. Connecticut Cross Connection Control Manual</li> </ul>		
<b>Course: Wells, Pumps and Piping I</b>	<b>A0750</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Well Fundamentals</li> <li>B. Pumps</li> <li>C. Components</li> </ul>		
<b>Course: International Plumbing Code Part I</b>	<b>A0711</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. International Plumbing Code, Chapters 1 thru 5, 8 &amp; 10</li> </ul>		
<b>Course: Fixtures, Appliances Installation and Repairs</b>	<b>A0708</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Plumbing Fixtures and Appliances</li> <li>B. Testing and Inspecting Plumbing Systems</li> <li>C. Customer Service and Plumbing System Repairs</li> </ul>		
<b>Course: Wells, Pumps and Piping II</b>	<b>A0751</b>	<b>36 Hours</b>
<ul style="list-style-type: none"> <li>A. Service</li> <li>B. Water Quality Assurance</li> <li>C. Electric Safety and Controls</li> <li>D. Community Water Systems, Shared Wells and Groundwater Heat Pumps</li> </ul>		

**Course: Water Treatment** **A0752** **36 Hours**

- A. Filtration Processes
- B. Aeration Processes
- C. Adsorption Process
- D. pH Modification and Neutralization Processes
- E. Ion Exchange Water Softening Process
- F. Iron, Manganese and Hydrogen Sulfide Treatment
- G. Multifunctional Treatment Systems
- H. Drinking and Cooking Water Quality
- I. Water Ailments- Symptoms, Causes and Remedies

**Course: International Mechanical Code** **A0729** **36 Hours**

- A. Administration of the International Mechanical Code

**Course: Special piping and Installation** **A0709** **36 Hours**

- A. Copper Tubing
- B. Plastic Piping
- C. Gas Piping

**Course: International Plumbing Code Part II** **A0741** **36 Hours**

- A. International Plumbing Code Chapters 6, 7, 9, 11 & 12

**Course: Related Codes and Standards** **A0730** **36 Hours**

- A. International Residential Code
- B. National Fire Protection Association Standards

## **Required Booklist for Plumbing Apprentice Students:**

Following are the required textbooks that each student must purchase for each course.

### **For Basic Math Computations (A0001):**

- Applied Mathematics, R. Jesse Phagan, Goodheart-Willcox Company, Inc. ISBN 1-56637-995-4
- Workbook: Applied Mathematics, R. Jesse Phagan, Goodheart-Willcox Company, Inc., ISBN 1-56637-996-2

### **For Plumbing Mathematics (A0014):**

- Mathematics for Plumbers and Pipefitters, Lee Smith, 8th Edition, 2013

### **For Blueprint Reading (A0031):**

- Print Reading for Construction, Residential and Commercial by Walter C. Brown and Daniel P. Dorfmueller, Goodheart-Willcox Company, Inc., ISBN 1-59070-347-2.

### **For OSHA 30 (A0099):**

- Code of Federal Regulations - 29 CFR Part 1926 (OSHA), with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>

### **For the following courses:**

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Drain, Waste and Vent I (A0706)

Drain, Waste and Vent II (A0746)

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- Textbook: Plumbing Design and Installation, American Technical Publishers<sup>3<sup>rd</sup></sup>(or latest edition)
- NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook, 2012, National Fire Protection Association,
- NFPA 58: Liquefied Petroleum Gas Code, 2014
- Connecticut Cross Connection Control Manual, Connecticut Department of Health

### **For Brazing, Cutting and Metallurgy (A2113)**

- Textbook: Welding Skills, 3<sup>rd</sup> Edition, Moniz and Miller, American Technical Publishers

### **For Wells, Pumps and Piping I and II (A0750 & A0751)**

- Water Systems Handbook, Water Systems Council

### **For Water Treatment (A0752)**

- Water Processing: Residential, Commercial, Light Industrial 3rd Edition, 2000, Wes McGowan, Water Quality Association 630-505-0160 [www.wqa.org](http://www.wqa.org)

### **For Sewer, Storm and Water Lines (A0754)**

- Pipe and Excavation Contracting, Dave Roberts, 2011, Craftsman Book Company,
- Installation Guide for Ductile Iron Pipe, 2015 Edition, Ductile Iron Pipe Research Association, 205-402-8700, [www.dipra.org](http://www.dipra.org)
- Concrete Pipe and Box Culvert Installation. (2007) American Concrete Pipe Association, 683 Grigsby Way, Cedar Hill, TX 75104. [www.concretepipe.org](http://www.concretepipe.org)

- CBYD Excavation Manual. Call Before You Dig. Available from <http://www.cbyd.com/excavatorsman.htm> (ONE CALL).

#### **For Special Piping and Installation (A0709)**

- The Copper Tube Handbook, Copper Development Association, [www.copper.org](http://www.copper.org)
- Plumbing Apprentice Training Manual for Plastic Piping Systems, Plastic Piping Educational Foundation
- National Fuel Gas Code Handbook, National Fire Protection Association (NFPA)

#### **For Gasoline Tank, Piping and Pump (A0749)**

- Recommended Practices for Installation of Underground Liquid Storage Systems, Petroleum Equipment Institute
- Recommended Practices for Installation of Aboveground Liquid Storage Systems for Motor Fueling, Petroleum Equipment Institute
- Recommended Procedure for Testing Electrical Continuity of Fuel-Dispensing Hanging Hardware, Petroleum Equipment Institute
- NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages, National Fire Protection Association (NFPA)

#### **For Plumbing Code, I & II (A0711 & A0741)**

- International Plumbing Code or International Plumbing Code Commentary 2015, 2018, and 2021. Contact ICBO (800) 284-4406, BOCA (800) 214-4231, or SBCCI (205) 591-1853. International Code Council

#### **For International Mechanical Code (A0729) and Related Codes and Standards (A0730)**

- International Mechanical Code or International Mechanical Code Commentary, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- International Fuel Gas Code, 2015, 2018, and 2021, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- International Residential Code Book 2006, International; Code Council
- NFPA 31: Standard for the Installation of Oil-Burning Equipment. (2006 or 2011).
- NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook, 2012
- NFPA 58: Liquefied Petroleum Gas Code, 2014,
- NFPA 85 Boiler and Combustion Systems Hazards Code
- NFPA 90A Standard for the Installation of Air Conditioning and Ventilation Systems
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