
Appendix A

WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE

DEVELOPED FOR
NORTH ALABAMA CRAFT TRAINING FOUNDATION

APPROVED BY THE
ALABAMA OFFICE OF APPRENTICESHIP
ALABAMA DEPARTMENT OF COMMERCE

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(Registration Agency Rep)

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Appendix A

WORK PROCESS SCHEDULE PLUMBER

O*NET-SOC CODE: 47-2152.00 RAPIDS CODE: 0432

National Occupation State Occupation

This schedule is attached to and a part of these Standards for the above identified occupation.

1. APPRENTICESHIP APPROACH

Time-based Competency-based Hybrid

2. TERM OF APPRENTICESHIP

The term of the apprenticeship is 8,000 hours, supplemented by the 697.5 total hours of related instruction.

3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 apprentice(s) to 1 journeyworker(s).

4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages specified in each Employer Acceptance Agreement (Appendix D). The minimum journeyworker wage for this program shall not be less than \$16.00/hr. and the starting wage shall not be less than \$8.00/hr. At a minimum, each employer is required to increase the apprentice’s wage at the intervals outlined below.

In no case will the starting wages of apprentices be less than that required by a minimum wage law that may be applicable.

PERIOD	HOURS	% OF JOURNEYWORKER WAGE
1 st	0-2,000	50%
2 nd	2,001-4,000	60%
3 rd	4,001-6,000	70%
4 th	6,001-8,000	90%
5 th	Completion wage	100%



5. PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of 500 hours.

6. SELECTION PROCEDURES

SECTION I – MINIMUM QUALIFICATIONS

Applicants will meet the following minimum qualifications to be eligible for the pool of applicants:

A. Age

Applicants must not be less than 18 years of age and provide appropriate verification of age respecting Alabama state laws.

B. Physical

Applicants will be physically capable of performing the essential functions of the apprenticeship program, with or without a reasonable accommodation, and without posing a direct threat to the health and safety of the individual or others.

C. Other

Applicants must possess a valid driver's license and must pass a drug screen prior to the acceptance of the apprenticeship program.

SECTION II – SELECTION PROCEDURES

The sponsor has adopted the following selection procedures, consistent with the requirements set forth in 29 CFR § 30.10(b):

1. An announcement of specific apprenticeship openings must be disseminated thirty (30) days in advance of the earliest date for application at each interval to the following agencies/ organizations:

- Registration Agency
- Women's Organizations/Centers Local Schools
- Employment Service Center One Stop Centers
- Vocational Education Schools



- Other Organizations/Centers (which can effectively reach minorities and women)

The announcement shall include the nature of the apprenticeship, requirements for admission to apprenticeship, availability of apprenticeship opportunities, sources of apprenticeship applications, and the Sponsor's equal opportunity policy. The period for accepting applications as established by the Sponsor is July 9- July 20 of each year.

2. Cooperation with school boards and vocational educational systems to develop programs for preparing students to meet the standards and criteria to qualify for entry into the apprenticeship program.

3. Internal communication of the Sponsor's Equal Opportunity Policy; will conduct in such a manner to foster understanding, acceptance, and support among the Sponsor's various officers, supervisors, employees, and members to encourage such persons to take the necessary action to aid in meeting its obligations under Title 29, CFR, and Part 30.

4. Utilization of journeyworkers to assist in the implementation of affirmative action in the apprenticeship program.

5. Granting advance standing or credit based on previously acquired experience, training, skills, or aptitudes for all applicants equally.

The Sponsor may grant credit towards the term of apprenticeship to new apprentices who demonstrate previous acquisition of skills or knowledge equivalent to that which is under these Standards. Apprentice applicants seeking credit for previous experience gained outside the supervision of the Sponsor must submit the request at the time of application and furnish such records, affidavits, and a letter from his/her employer to substantiate the claim. Applicants requesting such credit whom selected into the apprenticeship program will start at the beginning wage rate. The request for credit will consist of an evaluation and a determination made by the Sponsor during the probationary period when actual on-the-job and related instruction performance during observation. Prior to completion of the probationary period, the amount of credit to be awarded will be determined after the review of the apprentice's previous work and training/education record and evaluation of the apprentice's performance and demonstrated skill and knowledge during the probationary period. An apprentice granted credit should be advance to the wage rate designated for the period to which such credit accrues. The sponsor will advise the Registration Agency on any credit granted and the wage rate to which the apprentice. The granting of advanced standing is, uniformly applied to all apprentices as determined above.

6. NACTF will fill from an internal pool of employees and employers agree to post apprenticeship openings in locations visible to all employees.

SECTION III – DIRECT ENTRY



The sponsor who invokes a direct entry provision may do so without regard to the existing selection procedure or minimum qualifications used for entry into the apprenticeship program. Direct entry shall be done without regard to race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, genetic information, or an individual with a disability or a person 40 years old or older. The methods for direct entry are as follows:

- A. A military veteran who has completed military technical training school and/or participated in a registered apprenticeship program or related occupation while in the military in the occupation registered. Applicants must submit a DD-214 to verify military training and/or experience if they are a veteran and wish to receive consideration for such training/experience. The sponsor, with the assistance of the training provider and employer, will evaluate the training received to grant appropriate credit.
- B. An individual who has completed an AOA certified pre-apprenticeship training program and meets the minimum qualifications of the apprenticeship program. may be admitted directly into the program. The applicant shall provide official documentation confirming that they fulfilled the specific requirements of the pre-apprenticeship program, such as skills assessments, completion/graduation certificates, and transcripts. The sponsor will evaluate the pre-apprenticeship training received to grant appropriate credit.
- C. Individual who is a current employee by an employer with an Employer Acceptance Agreement. The employer will evaluate the current employee's skills to grant appropriate credit.



WORK PROCESS SCHEDULE PLUMBER

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Work Process Guidelines:

- During the apprenticeship, the apprentice shall receive work experience and job-related education in all phases of the occupation, including safe work practices, necessary to develop the skill and proficiency of a skilled professional.
- The program sponsor or its designated apprenticeship committee must ensure apprentices are rotated throughout the various work processes to ensure a well-rounded professional upon completion of the apprenticeship and identify what methodology will be used to track progression of experience on-the-job.
- Such on-the-job learning shall be carried on under the direction and guidance of a qualified professional.

Work Processes	Approximate Hours
Care and Use of Tools and Materials	550
Identifying materials, fittings, grades, and types of pipe.	
Use and operation of trade tools.	
Maintaining tools and equipment.	
Preparation of Tools, Equipment and Material for Plumbing and Heating	400
Selecting cast iron, galvanized and other types of piping for roughing in and finish work.	
Loading required material and equipment.	
Unloading at jobsite, using safety precautions and care in not damaging equipment and material.	
Caulking Cast Iron Pipe	400
Selecting and using proper tools for yarning oakum and caulking lead joints.	
Operating and maintaining several types of furnaces (gasoline, bottled gas, etc.) in melting pig lead following established safety precautions.	
Using safety measures in handling hot oakum and pig lead required in pouring joints.	
Checking for presence of water to avoid danger when pouring molten lead, etc.	



Drainage Piping and Fittings	800
Determining kinds of pipes used underground, within a building above grade.	
Installing cast iron, steel, or terra cotta piping.	
Pitching pipe for proper drainage, using recessed drainage fittings as required by codes and determining number of fixtures permissible on certain size waste lines.	
Venting	450
Learning the application and importance of venting.	
Installing main and branch venting, back venting, and reventing in accordance with State and City codes.	
Pipe Cutting, Reaming, Threading and Flanging	400
Setting up and operating threading machine.	
Using hand cutters.	
Using taps and reamers.	
Operation power drills.	
Installation and Maintenance of Steam and Hot Water Heating Systems	1,500
Installing main components.	
Fabrication of piping.	
Cutting and patching walls.	
Operating and testing for leaks	
Repairing and replacing components.	
Power and Industrial Process Piping	900
Fabrication and installing high pressure and special alloy piping.	
Welding pipe.	
Detail testing prior to operation of system.	
High and Low Pressure Boilers	500
Installing boilers.	
Fabricating and installing piping.	
Testing and placing in operation.	
Instructing operating personnel.	
Hot and Cold-Water Systems for Domestic Purposes	200
Measuring and cutting pipes for specifications.	
Sweating copper joints.	
Measuring, cutting, and threading galvanized pipe.	
Selecting, fitting, and installing valves.	
Installing in accordance with accepted code standards.	



Gas System Appliances	500
Selecting proper piping.	
Measuring, cutting, and threading piping.	
Application, unions, and joints.	
Testing for leaks.	
Venting in accordance with accepted code standards.	
Single Fixture Installation (Commodos, Bathtubs, etc.)	600
Preparing position rests.	
Hanging, fastening, connecting, and testing.	
Water Heater Installation	800
Checking for proper size and type of heater in accordance with job orders.	
Disconnecting old heater on replacement job.	
Installing and connecting new heater in conformance with accepted code standards.	
Venting unit.	
Total Program OJL Hours	8,000



**RELATED INSTRUCTION OUTLINE
PLUMBER**

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Related Instruction Guidelines:

- The course listings outline the related instruction that supplements the on-the-job learning. It is through the combination of both the on-the-job learning and the related instruction that the apprentice can reach the skilled level of the occupation.
- Each apprentice’s attendance and progress in related education must be tracked and appropriate records maintained.
- Time devoted to the job-related education shall not be considered as part of the on-the-job learning.
- Failure on the part of the apprentice to fulfill their obligation as to the related education and/or attendance, or their failure to maintain passing grades therein, shall constitute adequate cause for cancellation of their Apprenticeship Agreement.

Hours Instruction Provided: During Work Hours During Non-Work Hours Both
 Instruction Method: Classroom Correspondence/Shop Web-Based Learning

RTI Provider Name: North Alabama Craft Training Foundation
 Contact Name: Wade Thompson
 Contact Phone: 256-690-1677
 Contact Email: wade@nactf.org
 Contact Address: P.O. BOX 6145, Huntsville, AL 35813

Subject / Topic	Contact Hours
NCCER Core	
Basic Safety	12.5
Introduction to Construction Math	10
Introduction to Hand Tools	10
Introduction to Power Tools	10
Introduction to Construction Drawings	10
Basic Communication Skills	7.5
Basic Employability Skills	7.5
Introduction to Material Handling	5
Total NCCER Core RTI Hours	72.5
Level 1 -Plumbing	
Introduction to the Plumbing Profession	5
Plumbing Safety	22.5
Tools of the Plumbing Trade	10



Introduction to Plumbing Math	12.5
Introduction to Plumbing Drawings	17.5
Plastic Pipe and Fittings	12.5
Copper Tube and Fittings	12.5
Cast-Iron Pipe and Fittings	12.5
Steel Pipe and Fittings	12.5
Introduction to Plumbing Fixtures	7.5
Introduction to Drain, Waste, and Vent (DWV) Systems	10
Introduction to Water Distribution Systems	10
Total Level 1 RTI Hours	145
Level 2 - Plumbing	
Plumbing Math Two	15
Reading Commercial Drawings	25
Structural Penetrations, Insulation, and Fire-Stopping	15
Installing and Testing DWV Piping	30
Installing Roof, Floor, and Area Drains	5
Installing and Testing Water Supply Piping	20
Types of Valves	5
Installing Fixtures and Valves	20
Installing Water Heaters	10
Basic Electricity	10
Fuel Gas and Fuel Oil Systems	20
Total Level 2 RTI Hours	175
Level 3 - Plumbing	
Applied Math	17.5
Sizing and Protecting the Water Supply System	30
Potable Water Supply Treatment	15
Types of Venting	20
Sizing DWV and Storm Systems	20
Sewage Pumps and Sump Pumps	12.5
Corrosive-Resistant Waste Piping	7.5
Compressed Air	10
Service Plumbing	27.5
Total Level 3 RTI Hours	160
Level 4 - Plumbing	
Business Principles for Plumbers	15
Fundamentals of Crew Leadership	20
Water Pressure Booster and Recirculation Systems	12.5
Indirect and Special Waste	17.5
Hydronic and Solar Heating Systems	17.5
Codes	12.5



Private Water Supply Well Systems	10
Private Waste-Disposal Systems	10
Swimming Pools and Hot Tubs	7.5
Plumbing for Mobile Homes and Travel Trailer Parks	7.5
Introduction to Medical Gas and Vacuum Systems	15
Total Level 4 RTI Hours	145
Total Program RTI Hours	697.5