

---

---

# 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

Registered by: Michael Bridier  
(Registration Agency Rep)

Date: 2/24/2023



# Appendix A

## WORK PROCESS SCHEDULE PIPE FITTER

O\*NET-SOC CODE: 47-2152.00    RAPIDS CODE: 0414

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 665 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 <sup>st</sup>	0-2,000	50%
2 <sup>nd</sup>	2,001-4,000	60%
3 <sup>rd</sup>	4,001-6,000	70%
4 <sup>th</sup>	6,001-8,000	90%
5 <sup>th</sup>	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.

#### D. 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):

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 PIPE FITTER

**O\*NET-SOC CODE: 47-2152.00    RAPIDS CODE: 0414**

### 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.

<b>Work Processes</b>	<b>Approximate Hours</b>
<b>Use and Care of Tools and Equipment and Safety</b>	<b>750</b>
Welding, soldering, and brazing	
<b>Installation and Service (Compression Systems)</b>	<b>750</b>
Compressors - All Types	
Condensers - Water, Air, Combinations, Cascade and Evaporative	
Receivers - Tube Type and Shell	
Evaporators - Tube, Fin, Plate, Brine, Wet and Dry	
Piping - All Materials	
<b>Refrigerant Controls</b>	<b>450</b>
Expansion Valves - Hand, Thermostatic, and Automatic	
Power Elements, Mechanism	
Float Controls - High Side, Low Side, Bucket and Ball Types	
Capillary Tubes - Sizing and Orifices	
Check Valves - Solenoids, Unloaders, Pressures and Relief	
Safety - Hazards and Controls	
<b>Motor Controls (Installation and Service)</b>	<b>450</b>
Thermostats	
Pressure Devices	
Combinations, Adjustments Mechanisms	
Switches-Relays, Fuse Elements, and Protection and Delays	



<b>Electric Motors (Service) - Up to 5 Horsepower</b>	<b>275</b>
Installation - Alignment and Load Test	
Lubrication	
Field Test	
Servicing	
<b>Installation and Service (Absorption Systems)</b>	<b>275</b>
Solid Absorbent	
Liquid Absorbent	
Controls	
<b>Installation and Service (Hermetic, Semi-Hermetic)</b>	<b>275</b>
Dismantle and Rebuild	
Field Test	
Shop and Field Repair	
Controls	
<b>Commercial Refrigeration (Various Applications)</b>	<b>1,475</b>
Condensing Units - All Types	
Coils and Evaporators - Wet and Dry	
Heat Exchanger - Driers and Chemical Reactivators	
Surge Tanks, Separators, Refrigerant Piping and Insulating	
Vacuum and Pressure Test - Evacuating and Charging	
Multiple Installations - Multi-Temp and Freezers	
Truck and Transportation Refrigeration	
Marine Installation Service	
Cold Storage and Processing - Maintenance and Service	
Assemblies - Cooling Towers and Process Water Recovery	
Icemakers, Brine Chillers	
<b>Installation and Service (Air Conditioning Systems)</b>	<b>800</b>
Humidifiers and Dehumidifiers	
Filtering and Air Cleaning Equipment	
Circulating Equipment - Fans, Natural and Controls	
Cooling Equipment	
Packaged Units - Combinations, Single and Multiple	
Cooling Towers - Water Recovery, Evaporative and Air-Cooled Condensers	
<b>Installation and Service (Heating Equipment)</b>	<b>800</b>
Furnaces - Boilers (Round, Square, and Sectional)	
Fuel Burners - Stokers, Oil Burners, Gas Burners, and Electric	



Unit Heaters (Blowers), all types	
Packaged Units - Multiple, Combination, Single	
Safety - Hazards and Controls	
<b>Installation and Service (Fuel Burning Equipment)</b>	<b>450</b>
Oil Burners - Piping, Tank and Controls	
Gas Burners - Adjustments and Controls	
Stokers - Hopper, Bin Feed and Controls	
Electric - Heaters - Controls	
Safety - Hazards and Controls	
<b>Boiler Room Piping (Service and Installation)</b>	<b>450</b>
Heaters	
Circulators - Flow Control and Regulation Valves	
Pumps - Condensers, P.R. Valves, Tank and Blow Downs	
Expansion Loops - Joints, Anchors and Boiler Trim	
Safety - Hazards and Controls	
<b>Installation (Heating Systems)</b>	<b>800</b>
Hot Water - One-Pipe Forced Circulation	
Hot Water - Two-Pipe Forced Circulation	
Steam - One-Pipe, Two-Pipe Vapor and Vacuum Systems	
Installation Panels - Coils, Blowers, Rods, Convectors	
<b>Total Program OJL Hours</b>	<b>8,000</b>





## RELATED INSTRUCTION OUTLINE PIPE FITTER

**O\*NET-SOC CODE: 47-2152.00 RAPIDS CODE: 0414**

### 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
<b>NCCER Core</b>	
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
<b>Total NCCER Core RTI Hours</b>	<b>72.5</b>
<b>Level 1 - Pipefitting</b>	
Orientation to the Pipefitting Craft	5
Pipefitting hand tools	20
Pipefitting Power Tools	15



Oxyfuel Cutting	17.5
Ladders and Scaffolds	12.5
Motorized and Equipment One	10
<b>Total Level 1 RTI Hours</b>	<b>80</b>
<b>Level 2 - Pipefitting</b>	
Piping Systems	5
Drawings and Detail Sheets	15
Identifying and Installing Valves	20
Pipefitting Trade Math	15
Threaded Pipe Fabrication	15
Socket-Weld Pipe Fabrication	25
Butt-Weld Pipe Fabrication	37.5
Excavations	10
Underground Pipe Installation	20
<b>Total Level 2 RTI Hours</b>	<b>162.5</b>
<b>Level 3 - Pipefitting</b>	
Introduction to Basic Rigging	7.5
Rigging Practices	15
Standards and Specifications	10
Advanced Pipefitting Math	25
Motorized Equipment Two	10
Introduction to Aboveground Pipe Installation	25
Field Routing and Vessel Trim	15
Pipe Hangers and Supports	25
Testing Piping Systems and Equipment	20
<b>Total Level 3 RTI Hours</b>	<b>152.5</b>
<b>Level 4 - Pipefitting</b>	
Advanced Blueprint Reading	50
Advanced Pipe Fabrication	50
Stress Relieving and Aligning	10
In-Line Specialties	20
Special Piping	25
Hot Taps	10
Maintaining Valves	10
Fundamentals of Crew Leadership	22.5
<b>Total Level 4 RTI Hours</b>	<b>197.5</b>
<b>Total Program RTI Hours</b>	<b>665</b>