

Appendix A

WORK PROCESS SCHEDULE Structural Metal Fabricator and Fitter O*NET-SOC CODE: 51-2041.00 RAPID CODE 0325

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

1. TERM OF APPRENTICESHIP

The term of the occupation shall be three (3) or four (4) years with an OJL attainment of up to 2,000 hours per year for a total of 6,000 – 8,000 hours supplemented by the required hours of related instruction.

2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Insert numeric ratio as covered in the Collective Bargaining Agreement (CBA).

3. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyworker wage rate or as per the CBA.

3 Year Term Example*:

1 st 1000 hours	-	not less than _____
2 nd 1000 hours	-	not less than _____
3 rd 1000 hours	-	not less than _____
4 th 1000 hours	-	not less than _____
5 th 1000 hours	-	not less than _____
6 th 1000 hours	-	not less than _____

4 Year Term Example*:

1 st 1000 hours	-	not less than _____
2 nd 1000 hours	-	not less than _____
3 rd 1000 hours	-	not less than _____
4 th 1000 hours	-	not less than _____
5 th 1000 hours	-	not less than _____
6 th 1000 hours	-	not less than _____
7 th 1000 hours	-	not less than _____
8 th 1000 hours	-	not less than _____

*The Local Union and the JATC are to insert percentages negotiated in the Collective Bargaining Agreement.

4. **SCHEDULE OF WORK EXPERIENCE** (See attached Work Process Schedule)

The JATC may modify the work processes to meet local needs prior to submitting these Standards to the appropriate Registration Agency for approval.

5. **SCHEDULE OF RELATED INSTRUCTION** (See attached Related Instruction Outline)

Appendix A

WORK PROCESS SCHEDULE Structural Metal Fabricator and Fitter O*NET-SOC CODE: 51-2041.00 RAPIDS CODE: 0325

WORK PROCESS SCHEDULE

Job Processes (within courses)	Job Training Hours- 3 Year Program (6,000 hours)	Job Training Hours- 4 Year Program (8,000 hours)
<p>Shielded Metal Arc Welding (SMAW)</p> <ul style="list-style-type: none"> • Set-up SMAW equipment • Evaluate the quality of a SMAW weld • Run a stringer bead • Perform a butt joint (square) in the four basic positions • Perform a butt/groove weld in the four basic positions (flat, vertical, horizontal, overhead) • Perform a lap weld in the four basic positions (flat, vertical, horizontal, overhead) • Perform a t-joint/fillet in the four basic positions (flat, vertical, horizontal, overhead) • Perform a corner joint in the four basic positions (flat, vertical, horizontal, overhead) • Perform an edge joint in the four basic positions (flat, vertical, horizontal, overhead) 	375	500
<p>Gas Tungsten Arc Welding (GTAW)</p> <ul style="list-style-type: none"> • Set-up GTAW equipment • Evaluate the quality of a GTAW weld • Perform a butt/groove weld in the four basic positions (flat, vertical, horizontal, overhead) • Perform a lap weld in the four basic positions (flat, vertical, horizontal, overhead) • Perform a t-joint in the four basic positions (flat, vertical, horizontal, overhead) • Perform a corner joint in the four basic positions (flat, vertical, horizontal, overhead) • Perform an edge joint in the four basic positions (flat, vertical, horizontal, overhead) 	750	1,000
<p>OxyFuel Cutting and Welding (OFC/W)</p> <ul style="list-style-type: none"> • Set-up OFC equipment • Perform oxyfuel cutting • Perform oxyfuel welding • Perform oxyfuel brazing 	390	520

Job Processes (within courses)	Job Training Hours- 3 Year Program (6,000 hours)	Job Training Hours- 4 Year Program (8,000 hours)
<p>Gas Metal Arc Welding (GMAW)</p> <ul style="list-style-type: none"> • Set-up GMAW equipment • Perform a butt/groove weld in the appropriate position for short arc and/or pulse spray • Perform a lap weld in the appropriate position for short arc and/or pulse spray • Perform a t-joint in the appropriate position for short arc and/or pulse spray • Perform a butt/groove weld in the flat or horizontal position using globular or spray method • Perform a lap weld in the flat or horizontal position using globular or spray method • Perform a t-joint weld in the flat or horizontal position using globular or spray method 	1,500	2,000
<p>Rigging</p> <ul style="list-style-type: none"> • Identify types of fiber rope • Demonstrate coiling and uncoiling techniques • Whip the end of a line • Inspect fiber rope • Splice fiber rope • Demonstrate the ability to tie various types of knots with fiber rope • Reeve rope falls • Identify types of wire ropes • Inspect wire ropes • Attach end fittings to wire rope • Identify rigging hardware • Demonstrate the use of a single choker hitch • Demonstrate the use of a double wrap choker hitch • Demonstrate the use of a single basket hitch • Demonstrate the use of a double wrap basket hitch • Inspect and use chains • Use an overhead crane • Use a jack • Use a roller • Use a pulling device • Operate a fork lift • Demonstrate crane signals 	188	250

Job Processes (within courses)	Job Training Hours- 3 Year Program (6,000 hours)	Job Training Hours- 4 Year Program (8,000 hours)
<p>Tools and Equipment</p> <p>Set-up and use the following:</p> <ul style="list-style-type: none"> • Hand tools • Measuring devices • Precision measuring instruments • Shears • Punch press • Drill press • Grinders • Bending brakes • Saws • Beam drilling line • Beam punch line • Plate drilling machine • Plate cutting machine • Brakes • Rolls • Ironworker 	1,125	1,500
<p>Fabrication and Assembly</p> <ul style="list-style-type: none"> • Position, align, fit, and weld parts to form complete units or subunits, following blueprints and layout specifications, and using jigs, welding torches, and hand tools • Verify conformance of work pieces to specifications, using squares, rulers, and measuring tapes • Tack-weld fitted parts together • Layout and examine metal stock or work pieces to be processed to ensure that specifications are met • Align and fit parts according to specifications, using jacks, turnbuckles, wedges, drift pins, pry bars, and hammers • Locate and mark work piece bending and cutting lines, allowing for stock thickness, machine and welding shrinkage, and other component specifications • Position or tighten braces, jacks, clamps, ropes, or bolt straps, or bolt parts in position for welding or riveting • Study engineering drawings and blueprints to determine materials requirements and task sequences • Move parts into position, manually or with hoists or cranes 	1,672	2,230
Total Hours	6,000	8,000

RELATED INSTRUCTION OUTLINE
Structural Metal Fabricator and Fitter
O*NET-SOC CODE: 51-2041.00 RAPIDS CODE: 0325

Course	Hours Required	
	Classroom	Shop
Training and Fabrication for Shop Ironworkers	30	50
Introduction to Blueprint Reading	20	0
Mathematics for Ironworkers	30	0
10-Hour OSHA Training	10	0
Scaffold Erector/Dismantler Training for Ironworkers	12	4
First Aid/CPR	8	0
Welding (OxyFuel, SMAW, GTAW, GMAW)	30	100
Rigging and Cranes	40	40
Structural Steel Erection 1	30	20
Fork Lift	6	2
Layout Instruments for Ironworkers	10	10
Supervisor Training for Shop Ironworkers	24	0
Total Classroom and Shop Hours	250	226
Total Hours	476	

The International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers requires a minimum of 160 classroom and shop hours and a maximum of 2,000 on-the-job learning (OJL) hours per year for a shop Structural Metal Fabricator and Fitter apprenticeship program. This means that the minimum is 480 for classroom and shop for a total of 6,000 hours for a three (3)-year program and 640 for a total of 8,000 hours for a four (4)-year program.