

# Appendix A

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## WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE



HILLYARD TECHNICAL CENTER/SAINT JOSEPH SCHOOL DISTRICT

**For the Occupation of:**

**WELDER**

*(Alternate Title: Service Mechanic - Auto Mfg)*

**O\*NET-SOC CODE: 51-4121.06**

**RAPIDS CODE: 0622CB**

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**Developed in Cooperation with:**

**U.S. DEPARTMENT OF LABOR  
OFFICE OF APPRENTICESHIP**



## Appendix A

**WORK PROCESS SCHEDULE**  
**HILLYARD TECHNICAL CENTER/ST. JOSEPH SCHOOL DISTRICT**  
Welder  
**O\*NET-SOC CODE: 51.4121.06 RAPIDS CODE: 0622CB**

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 a minimum OJL attainment of **2,000-4,000 hours**, supplemented by the minimum required **288** hours of related instruction.

### 3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice to 1 Journeyworker.

### 4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is:  
\$19.89.

Starting Pay: \$13.00 with increase @ 500 OJT + positive review: \$13.50

### 5. PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period of approximately 6 months. Students readiness for continuation in the program will be assessed at spring conferences. Input will be collected from the student's home school, technical instructor and employer.



## **6. SELECTION PROCEDURES**

Students engage in a rigorous selection process for apprenticeship positions. Students apply online to indicate interest in preapprenticeship. Students are selected for preapprenticeship based on recommendation by the sending school counselor and their technical instructor.

The Apprenticeship Coordinator promotes diversity in the program by making it accessible to all who are interested. Students receive support in composing a resume, preparing for interviews, researching job opportunities and companies, completing OSHA training and workplace communication. Students who follow through and complete these tasks dutifully will be presented to employers as candidates for hire. Those who procure employment become registered apprentices with our program upon confirmation with the sending school and parent/guardian.

All Registered Youth Apprentices are celebrated at a spring signing ceremony and become the next cohort for our program.



**WORK PROCESS SCHEDULE  
HILLYARD TECHNICAL CENTER/ST. JOSEPH SCHOOL DISTRICT**

<b>WELDER, COMBINATION</b>	
<b>Job Description:</b> Use hand-welding, flame-cutting, hand-soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.	
<b>RAPIDS Code:</b> 0622CB	<b>O*NET Code:</b> 51-4121.06
<b>Estimated Program Length:</b> 2,000-4,000 hours	
<b>Apprenticeship Type:</b> <input checked="" type="checkbox"/> Competency-Based <input type="checkbox"/> Time-Based <input type="checkbox"/> Hybrid	

Suggested On-the-Job Learning Outline

Apprenticeship Competencies – Technical

The below on-the-job-learning (OJL) work process competencies are intended as a guide. It need not be followed in any particular sequence, and it is understood that some adjustments may be necessary in the hours allotted for different work experience. In all cases, the apprentice is to receive sufficient experience to make them fully competent and use good workmanship in all work processes, which are a part of the trade. In addition, the apprentice shall be fully instructed in safety and OSHA requirements.

Ratings are:

- No Exposure- Apprentice has not been exposed to this skill/concept yet.
- Not Mastered- Apprentice requires instruction and close supervision.
- Requires Supervision- Apprentice can complete task with limited or periodic supervision.
- Proficient- Can work independently without supervision

GAS METAL ARC WELDING	No Exposure	Not Mastered	Requires Supervision	Proficient
Weld a 3/16" (0.2") [5 mm] horizontal fillet weld in T joint in the horizontal position in a straight line				
Weld a 5/16" (0.3") [8 mm] horizontal fillet weld in Lap joint in the horizontal position in a straight line				
Weld square groove butt joint in the flat position				
Weld flare bevel groove T joint in the flat and horizontal positions				



Weld a 3/16" (0.2") [5 mm] horizontal fillet weld in T joint in the horizontal position around a small diameter pipe				
Weld a 5/16" (0.3") [8 mm] horizontal fillet weld in T joint in the horizontal position around a small diameter pipe				
<b>SHIELDED METAL ARC WELDING</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
Installation, set-up and maintenance of equipment				
Striking and controlling the arc				
Quality of welds, discontinuities				
Surface welds, flat position				
Fillet weld T-joint & Lap, horizontal position				
Fillet weld T-joint vertical				
Fillet weld T-joint overhead				
Triple pass weld, all positions				
Square groove weld				
<b>AIR CARBON CUTTING- GOUGING</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
Set up, adjust and regulate air pressure, power source and torch				
Identify appropriate electrode, proper current settings and travel speed				
Perform maintenance on CAC-A equipment				
<b>OXY-FUEL CUTTING/ PLASMA CUTTING</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
Set up, adjust and regulate tanks, hoses and torch				
Perform manual straight cutting				
Perform manual bevel cutting				



Perform manual washing				
How to pierce				
<b>JIGS AND FIXTURES</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
Verify shape of metal parts according to blueprints				
Assemble metal parts in jigs and fixtures				
Tack parts together				
<b>SAFETY</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
OSHA Training				
Safety procedures and practices				
<b>TOOLS &amp; EQUIPMENT</b>	No Exposure	Not Mastered	Requires Supervision	Proficient
Operate grinders, de-bur stock, rough removal of material				
Use and care for hand tools, wrenches, hammers, punches, pliers, etc.				
Use and care for measuring devices, tape measures, rulers, scales, caliper, dividers, etc.				
Use and care for precision instruments; micrometers, verniers, fixed gauges, etc.				

<b>BEHAVIORAL COMPETENCIES</b>	<b>4-Exceeds Target</b>	<b>3- Achieves Target</b>	<b>2- Meets Some Targets</b>	<b>1- Not Meeting Targets</b>
Manufacturing Basics: Student shows a basic understanding of Manufacturing and desire to learn the industry.				
Communication: Student is receptive to learning and communicates effectively with coworkers.				
Enthusiasm & Attitude: Student shows a positive mental attitude and enthusiasm toward learning.				



Leadership & Teamwork: Student contributes ideas and collaborates with coworkers to accomplish goals.				
Networking: Student communicates well within the workplace in order to further productivity.				
Problem Solving & Critical Thinking: Student identifies solutions to most problems and knows when and who to ask for help.				
Professionalism: Exhibits appropriate behavior on the job and is productive.				

Date of evaluation: \_\_\_\_\_ Company Name: \_\_\_\_\_

Apprentice Name: \_\_\_\_\_ Apprentice Signature: \_\_\_\_\_

Mentor Name: \_\_\_\_\_ Mentor Signature: \_\_\_\_\_

Date turned in: \_\_\_\_\_ Instructor Signature: \_\_\_\_\_



## RELATED INSTRUCTION OUTLINE

### Welder

**O\*NET-SOC CODE: 51.4121.06 RAPIDS CODE: 0622CB**

Please provide the Related Instruction Outline to include a list of the anticipated courses, the learning objectives, and the estimated number of hours that each course will last.

**Related Technical Instruction provided by** Hillyard Technical Center, Saint Joseph, Missouri <https://hillyardtech.sjsd.k12.mo.us/>

Each apprentice **will receive annual compliance training in anti-harassment** in accordance with Paragraph 30.3, CFR. 29.30. Additional resources can be found at <https://www.apprenticeship.gov/eo/sponsors/prevent-harassment>

### Course Descriptions:

#### Hobart Institute Of Welding Technology

OAW	GTAW	FCAW
SMAW	GMAW	

Students learn eight different types of welding and will cover **the minimum 288 hours of Related Technical Instruction (RTI)**.

**First year:** Trade terms; tools; oxy-fuel welding process; oxy-fuel cutting torch; reference books; charts and manuals of codes and standards; blueprint reading; beginning heat treatment and metallurgy; oxy-fuel welding tests; brazing tools; power sources; consumables; introduction to shielded metal arc welding (SMAW or Stick Welding); Industrial math; Intermediate SMAW.

**Second year:** Shielded metal arc welding (SMAW); gas metal arc welding (GMAW or MIG Welding); gas tungsten arc welding (GTAW or TIG Welding); quality control; shop projects; resume and job application