



## APPENDIX A

### PLANT MAINTENANCE – WELDER

D.O.T. CODE 819.384-010

O\*NET CODE 51-4121.06

This training outline is the current standard for Work Processes and Related Instruction. Changes in technology, regulations, and safety/health issues may result in the need for additional on-the-job or classroom training.

### WORK PROCESSES

	<u>Approximate Hours</u>
A. <u>Basic Techniques</u>	1,000
1.    Following all safety procedures and policies	
2.    Understanding oral or written work instructions	
3.    Using hand tools and measuring devices	
4.    Performing simple welding with different processes	
5.    Simple burning by hand with oxy-acetylene	
6.    Assisting journey-level welders	
7.    Simple blueprint reading and fabrication/repair	
8.    Simple welding to meet American Welding Society (AWS) codes and standards	
9.    Cosmetic grinding (if applicable)	
10.   Performing preventive maintenance and minor repair of welding equipment	
B. <u>Oxy-acetylene Welding and Cutting</u>	1,000
1.    Following all safety procedures and policies	
2.    Performing a variety of cutting operations on different thicknesses of steel	
3.    Setting up templates and using burning table	
4.    Performing oxy-acetylene welding	

C.	<u>Soldering and Brazing</u>	200
	<ol style="list-style-type: none"> <li>1. Following all safety procedures and policies</li> <li>2. Soldering</li> <li>3. Brazing</li> </ol>	
D.	<u>G.T.A.W. (T.I.G.)</u>	1,950
	<ol style="list-style-type: none"> <li>1. Following all safety procedures and policies</li> <li>2. Reading blueprints for advanced welding</li> <li>3. Setting up fixtures for complex welding assemblies</li> <li>4. Using inert gas as a backing</li> <li>5. Setting up and using an automatic voltage-controlled welding head and automatic wire feed</li> <li>6. Welding of carbon steel and stainless steel</li> <li>7. Welding of dissimilar metals</li> <li>8. Demonstrating knowledge of filler metals and their applications</li> <li>9. Using G.T.A.W. process and conforming to AWS codes and standards</li> <li>10. Demonstrating basic knowledge of T.I.G. torches, parts, machines</li> </ol>	
E.	<u>G.M.A.W. (M.I.G.)</u>	1,950
	<ol style="list-style-type: none"> <li>1. Following all safety procedures and policies</li> <li>2. Setting up machines and wire</li> <li>3. Welding carbon steel and stainless steel</li> <li>4. Demonstrating knowledge of filler metals required for carbon steel and stainless steel</li> <li>5. Welding to AWS codes and standards</li> <li>6. Demonstrating basic knowledge of M.I.G. torches, parts, machinery</li> </ol>	
F.	<u>Rigging</u>	400
	<ol style="list-style-type: none"> <li>1. Following all safety procedures and policies</li> <li>2. Using such devices as chain fall, lift, hoist, jack</li> <li>3. Recognizing load limits</li> </ol>	

G.	<u>Layout and Fixtures</u>	1,000
	1.    Layouts (simple to complex)	
	2.    Designing and building appropriate and effective fixtures	
	3.    Using machine tools such as mill, lathe, drill press	
H.	<u>Inspection and Quality Control</u>	500
	1.    Using precision measuring instruments, such as gauges, calipers, comparators	
	2.    Working with thin-gauge materials (if applicable)	
	3.    Working to close tolerances (such as .015 inch)	
		_____
	TOTAL HOURS	8,000

*Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <http://www.labor.state.ny.us/workerprotection/publicwork/PDFs/Article8FAQS.pdf>.*

APPENDIX B

PLANT MAINTENANCE – WELDER

RELATED INSTRUCTION

Safety and Health

*Topics to be covered include, but are not limited to:*

Avoiding Overexposure to Fumes

Burn Protection

Electrical Safety

Lockout/Tagout

Fire and Explosion Prevention

First Aid – minimum 6.5 hours every 3 years

Good Housekeeping

Proper Lifting Techniques

Proper Use of Personal Protective Equipment (PPE)

Protecting Against Noise

Radiation Protection

Right-to-Know/Material Safety Data Sheets (MSDS) for All Hazardous Materials

Used on the Job

Safeguarding Vision

Scaffold/Platform Safety (if applicable)

Blueprints

Basic Blueprint Reading

Advanced Blueprint Reading

Weld Symbols

Reading Welding Charts

Reading Codes and Standards

Layout

Mathematics

Fundamentals

Trade Applications

Precision Measurement

Trade Theory and Science

Safe Use and Care of Hand and Power Tools

Safe Use and Care of Equipment and Machines

Terminology

Metals Used in the Trade and Their Properties

Fundamentals of Electricity

Oxy-acetylene Welding and Cutting  
G.T.A.W.  
G.M.A.W.  
Fixtures and Fixture Design  
Inspection and Quality Control  
American Welding Society Certification Course (optional)

Other Workplace Skills

Sexual Harassment Prevention Training – minimum 3 hours

Other Related Courses as Necessary

A minimum of 144 hours of Related Instruction is required for each apprentice for each year.