



STATE OF NEW YORK
DEPARTMENT OF LABOR

APPENDIX A

PLANT MAINTENANCE – MILLWRIGHT

D.O.T. CODE 638.281-018

This training outline represents a minimum standard in terms of work processes and related instruction which are required to achieve skilled worker status. It is recognized that rapid technological and regulatory changes will frequently result in the need for mastery of additional on-the-job or theoretical instruction.

WORK PROCESSES

	<u>Approximate Hours</u>
A. <u>Tools, Machines, and Equipment</u>	600
- Use of personal protective safety equipment	
- Safe use and proper care of hand tools, power tools, measuring devices, equipment	
- Familiarization with industrial machines and equipment	
- Stockroom layout, catalogs, ordering procedures	
B. <u>Rigging and Equipment Handling</u>	1,200
- Erecting and use of ladders	
- Erecting, dismantling, and repairing scaffolding	
- Unloading/unpacking machinery and equipment	
- Inspecting for completeness and any damages	
- Selection of conveying and hoisting methods, based on load-bearing characteristics	
- Cables, ropes and chains: selection based on load-bearing characteristics, inspections, adjustment, replacement, splicing, knotting, annealing, forging	
- Selection and use of pulleys	
- Use of slings and chokers	
- Hitching	
- Other hoisting devices	
- Use of dollies and rollers	
- Assisting crane operator (optional)	
C. <u>Installation of Machinery and Equipment</u>	1,200
1. <u>General</u>	
- Review of blueprints	
- Layouts	
- Checking utility connections	

C.	<u>Installation of Machinery and Equipment</u> – continued <ul style="list-style-type: none"> - Assembling machinery and equipment - Installing electric motors (excluding wiring) - Setting machines and equipment - Measuring, leveling, aligning - Fastening (bolting, welding, riveting) - Grouting - Calibrating - Conducting test run - Adjusting 2. <u>Robots (optional*)</u> <ul style="list-style-type: none"> - Operating fundamentals - Installing mechanical parts - Modifying programs 	
D.	<u>Maintenance and Repair of Machinery and Equipment</u> <ul style="list-style-type: none"> - Preventive maintenance: inspection, cleaning, lubrication, replacement and repair of worn parts - Troubleshooting: assembling and disassembling; inspecting mechanical parts; removing, replacing and repairing defective parts; calibrating; adjusting and aligning; conducting test run - Using machines such as engine lathe and grinder to grind, file, and turn machine parts to specifications - Making replacement parts for machines and equipment - Diagnosing and repairing automated systems (including robots, if available) 	3,000
E.	<u>General Carpentry</u> <ul style="list-style-type: none"> - Building forms - Making safety blocks - Constructing guard rails - Performing other carpentry duties necessary to set up machines - Maintaining buildings and fixtures (if in keeping with trade jurisdiction and area practice) 	500
F.	<u>Foundations and Pavement</u> <ul style="list-style-type: none"> - Constructing wood, concrete, and steel foundations for machines - Constructing and repairing sidewalks, roads, drives (if in keeping with trade jurisdiction and area practice) 	500
G.	<u>Cutting and Burning</u> <ul style="list-style-type: none"> - Torch cutting - Welding 	500

- Brazing	
- Soldering	
H. <u>Pipefitting</u> (optional*)	500
- Fabricating, installing and repairing piping and tubing	
- Installing and repairing valves, supports, and other associated devices	
- Unplugging lines	
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Total Hours	8,000

*If optional work processes are not chosen, the extra hours should be devoted to further mastery of the other required work processes.

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 – MILLWRIGHT

RELATED INSTRUCTION

Safety

- Fundamentals
- Trade Safety
- Asbestos Awareness – minimum 4 hours (see attachment)

Industrial History and Labor Relations (20 hours)

- History and Background (6 hours first year)
- Current Laws and Practices (14 hours second year)

Blueprint Reading and Sketching

- Elementary Industrial Blueprint Reading
- Advanced Industrial Blueprint Reading
- Reading Mechanical Schematics
- Sketching and Layout

Mathematics

- Fundamentals of Mathematics
- Shop Mathematics and Measurement
- Use of Handbooks and Reference Tables
- Estimating for Installation and Reconditioning

Trade Theory and Science

- Hand Tools, Power Tools and Portable Equipment for Millwrights
- Machine Tools
- Use and Care of Tools and Equipment
- Materials of the Trade
- Properties of Construction Materials
- Fundamental Mechanics
- Advanced Mechanics
- Hydraulics
- Pneumatics
- Basic Electricity
- Electronics
- Introduction to Industrial Machines
- Introduction to Computers
- Operational Fundamentals of Automated Systems (including robots, if available)
- Plant Planning and Layout
- Scaffolding
- Rigging
- Installation of Machinery and Controlling Auxiliaries
- State and Local Codes for Installing Machinery

Plant Maintenance – Millwright Related Instruction – continued

Trade Theory and Science – continued

Welding

Concrete Foundations and Construction

Power Transmission Equipment Installation

Mechanical Maintenance, Repair, Troubleshooting

Carpentry for Millwrights

Advanced Carpentry for Millwrights

Sheetmetal Work for Millwrights (optional)

Industrial Pipefitting (If Work Process “H” is selected)

Interpersonal Communication

First Aid – 6.5 hours minimum every 3 years

Sexual Harassment Prevention Training (minimum 3 hours)

Other Related Courses as Necessary

144 Hours of Related Instruction is Required for Each Apprentice for Each Year.

ATTACHMENT TO APPENDIX B

Asbestos Awareness

This course must be delivered by one of the following:

1. A provider currently approved by the New York State Department of Health to deliver asbestos safety training.
2. A person holding a current Asbestos Handler certificate from the New York State Department of Labor in the title of: Inspector, Supervisor, Project Monitor, Management Planner, or Project Designer.
3. Anyone otherwise approved by the New York State Education Department.

Minimum course contents must include the following:

1. Definition of asbestos
2. Types and physical characteristics
3. Uses and applications
4. Health effects:
 - Asbestos-related diseases
 - Risks to families
 - Cigarette smoking
 - Lack of safe exposure level
5. Employer-specific procedures to follow in case of potential exposure, including making a supervisor or building owner immediately aware of any suspected incidental asbestos disturbance so that proper containment and abatement procedures can be initiated promptly.

Notwithstanding the above course requirement, employers are advised that they must also be in compliance with New York State Department of Labor Industrial Code Rule 56 at all times.

Employers are further advised, and must advise all apprentices, that completion of the above course requirement does not authorize any person to remove, encapsulate, enclose, repair, disturb, or abate in any manner, any friable or non-friable asbestos, asbestos containing material, presumed asbestos containing material, or suspect miscellaneous asbestos containing material.