



INDUSTRIAL MANUFACTURING TECHNICIAN
(Time-Based)

APPENDIX A
O*NET CODE 17-3029.09

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 learning.

WORK PROCESSES

| | <u>Approximate Hours</u> |
|---|--------------------------|
| A. <u>Safety and Workplace Orientation</u> | 100 |
| 1. Follow employer-specific safety procedures around power supply, machines, equipment, tools, and manufacturing processes. | |
| 2. Recognize and minimize potential hazards. | |
| 3. Adhere to Occupational Safety and Health Administration (OSHA) General Industry safety standards. | |
| 4. Maintain clean work areas. | |
| 5. Demonstrate awareness of First Aid, CPR, and bloodborne pathogens. | |
| B. <u>Production Equipment Set-Up</u> | 500 |
| 1. Perform mechanical set-up per employer's Standard Operating Procedure, and equipment manufacturer's specifications. | |
| 2. Read and interpret production orders. | |
| 3. Plan and identify set-up requirements. | |
| 4. Use appropriate hand and power tools. | |
| 5. Select tools and materials. | |
| 6. Assemble equipment. | |
| 7. Test and verify set-up. | |
| 8. Read and understand job specifications. | |
| C. <u>Production Equipment Operation</u> | 900 |
| 1. Use appropriate hand and power tools. | |

2. Use technical drawings, formulas and process control sheets efficiently.
3. Operate production equipment: startup, run, and shutdown.
4. Follow production schedule.
5. Monitor and inspect products.
6. Monitor and adjust equipment as needed.
7. Disassemble equipment and components, if appropriate.
8. Sanitize equipment per employer standards, if applicable.
9. Document work; document production process; document adjustments made during production.
10. Maintain accurate recording of on-the-job training hours.

D. Quality Production and Quality Assurance

700

1. Visually inspect materials, products, parts, and finished goods.
2. Perform product quality checks.
3. Demonstrate awareness of/identify defects and causes of rework.
4. Interpret tolerances using technical drawings and job specifications.
5. Adhere to customer-specific quality guidelines.
6. Follow employer-specific quality guidelines.
7. Use trade-related math to measure and inspect work.
8. Select and use various hand and mechanical metrology tools, such as micrometers, calipers, dial and electronic indicators, gauge blocks, optical comparators, Coordinate Measuring Machines (CMM), to assure quality product.
9. Identify and report non-compliant stock, material, parts, and finished goods.
10. Document all quality tests; understand implications and consequences of documentation.
11. Use applicable systems to report results and document work.

F. Routine Equipment Maintenance

100

1. Inspect equipment and employ basic awareness of maintenance concepts.
2. Identify a malfunctioning machine.
3. Follow general lubrication guidelines.
4. Apply preventative maintenance practices effectively; utilize manufacturer-specific guidelines where appropriate.
5. Follow basic troubleshooting guides.
6. Assist and communicate with maintenance personnel regarding equipment malfunction(s).
7. Demonstrate ability to recognize and/or solve mechanical problem(s).
8. Use autonomous maintenance principles.

| | |
|---|-------------------|
| <p>G. <u>Inventory and Material Processes</u></p> <ol style="list-style-type: none"> 1. Demonstrate awareness of in-plant material flows. 2. Identify material management processes. 3. Compare inventory flow to roles and responsibilities. 4. Learn and apply “lean” manufacturing principles to workplace processes. 5. Demonstrate awareness of logistics related to raw material and customer deliveries. | <p>100</p> |
| <p>H. <u>General Business Knowledge</u></p> <ol style="list-style-type: none"> 1. Describe the importance of plant and departmental goals, e.g., Key Performance Indicators. 2. Relate the importance of IMT to employer success and workforce stability. 3. Apply basic business terms to manufacturing-related workplace processes and activities. 4. Describe the flow of work: “upstream” or downstream.” | <p>50</p> |
| <p>I. <u>Continuous Improvement</u></p> <ol style="list-style-type: none"> 1. Suggest process improvements - both business and manufacturing. 2. Participate in continuous improvement activity for professional growth. 3. Minimize and remove waste - environmental, material, processes, and manufacturing. 4. Apply root cause analysis to improve manufacturing process. 5. Adapt to process changes when introduced. 6. Participate in cross-training opportunities. | <p>100</p> |
| <p>J. <u>Local Options</u></p> <ol style="list-style-type: none"> 1. The employer may establish additional training and competencies not stated above, or they may assign these hours to one or more of the work processes included above. | <p>150</p> |

| | |
|--------------------|--------------------|
| Total Hours | <u>2700</u> |
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Grateful acknowledgment for assistance is made to: Joe Nicosia, Manufacturing Industry Coordinator-Wisconsin Regional Training Partnership; and to the State of

Wisconsin, Bureau of Apprenticeship Standards, 201 East Washington Avenue,
Madison WI 53703.

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>.

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APPENDIX B

RELATED INSTRUCTION

Safety, Health and the Workplace

General Workplace Safety

First Aid & CPR (minimum 6.5 hours)

Personal Protective Equipment (PPE)

Right-to-Know/Safety Data Sheets (SDS)

Asbestos Awareness (if present – see Attachment to Appendix B)

Lockout/Tagout (LO/TO)

Sexual Harassment Prevention Training (minimum 3 hours)

Occupational Safety and Health Administration (OSHA) 10-Hour General Industry

OSHA 30-Hour General Industry (at option of sponsor)

Trade Theory and Skills

Quality Practices & Measurement Module

Computer Fundamentals

Technical Drawings

Trade Math

Geometrical Dimensioning & Tolerancing (GD&T)

Metrology

Manufacturing Production & Processes Module

Maintenance Awareness Module

Lean Manufacturing

Tools and Equipment: Proper Care and Use

Emerging Trends and Technologies in Manufacturing

Workplace Communications: including giving instructions, writing a technical memo,
explaining a technical process

Welding (if performed on-the-job)

Fundamentals of Mechanical Concepts (if applicable)

Fundamentals of Hydraulics and Pneumatics (if applicable)

Additional Courses as Necessary

A Minimum of 216 Hours of Related Instruction Are Required for Each Apprentice

New York State Education Department

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.