

Industrial Manufacturing Technician

Apprenticeship
Training
Guidelines

Apprentice: _____

Employer: _____

Assessor(s): _____

Date: _____

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How to Use This Book

Preface

The Industrial Manufacturing Technician apprenticeship program uses the hybrid model, which mandates apprentices to complete time and competency requirements for each work process outlined in the Apprentice Contract.

This Job Book was developed for the apprentice and employer to record the apprentice's progress in meeting the competency requirements. Its use and preservation are the responsibility of both parties.

The Job Book is aligned with the Apprentice Contract, and is organized as follows:

1. Competencies are indicated by chapters, and are mandatory. Each competency aligns directly with a work process.
2. Duties are indicated by letters, and are optional. Each duty aligns with a bulleted duty under the work process.
3. Tasks are indicated by numbers, and are optional. They are not included in the Apprentice Contract.

Employers are required to instruct apprentices in all competencies by training the apprentices in as many duties and tasks as are available to the employer. Employers may add duties and tasks not included in the book, or substitute comparable duties and tasks if an item is unavailable during training.

Apprentices must satisfy all competency and time requirements to complete the program

Important Instructions for the Trainer

You are required to instruct apprentices in all competencies by training the apprentices in as many duties and tasks as are available to the employer. The competencies do not need to be instructed or completed in a specific order.

Employers may add duties and tasks not included in the book, or substitute comparable duties and tasks if an item is unavailable during training. If this occurs, record the work in the lines, "Other (please specify)."

The apprentice must demonstrate proficiency in the competencies before you sign off. It is recommended that the apprentice discuss and perform each task several times. Items must be signed and dated in ink by you and the apprentice. Use the columns marked "JW" for journey worker. Direct the apprentice to use the columns marked "APR" for apprentice.

Review the Job Book with the apprentice's supervisor on a regular basis to ensure that the apprentice has a sufficient variety of work to complete all competencies by the end of the apprenticeship program.

Use this book with the Apprentice Contract and in accordance with employer policies and procedures. The apprentice must comply with all applicable federal, state, local and employer safety and health standards. All work shall be performed in a professional manner and in accordance with any applicable building codes and professional industry standards.

Important Instructions for the Apprentice

This Job Book has been developed to identify skills required for you to reach journey worker status in your occupation. You are required to meet all competencies in this book by completing as many duties and tasks as are available to your employer. You do not need to meet the competencies in a specific order.

Employers may add additional duties and tasks not included in the book, or substitute comparable duties and tasks if an item is unavailable during training. If this occurs, record the work in the lines, "Other (please specify)." Complete numerous tasks at each step to ensure you complete all requirements by the end of your program. Discuss and perform each item more than once.

Review this Job Book with your supervisor on a regular basis. Keep a journal of your daily work, including hours, why a task was not completed, and conversations regarding job details. On occasion, these detailed notes can be used to solve legal disputes.

Your trainer will sign off on an item only after you demonstrate an acceptable skill level. You and your trainer must sign and date each completed item in ink. Your trainer must use the columns marked "JW" for journey worker, and you must use the columns marked "APR" for apprentice.

Use this book with the Apprentice Contract and in accordance with employer policies and procedures. You must comply with all applicable federal, state, local and employer safety and health standards, including any applicable building codes and professional industry standards.

Competency 1:

Protect Self and Other Workers from Accidents and Injuries

	Duties and Tasks	Date	JW Initials	Date	APR Initials
A.	Follow industry specific safety procedures around electricity, machines, equipment and manufacturing processes				
	<i>The apprentice shall properly perform the following:</i>				
01	Use of lock-out/tag-out procedures, both OSHA 1910.269 and employer-specific				
02	Demonstrate awareness of employer's safety policies				
03	Use and explain the purpose for required personal protective equipment, including but not limited to head, hand, ear, eye, foot, and body protection				
04	Identify proper tools and use				
05	Demonstrate proper personal lifting techniques				
06	Identify and inspect appropriate lifting equipment, such as hoists, straps, lifts, etc.				
07	Demonstrate proper use of appropriate lifting equipment				
08	Obtain proper certification/license for operating a forklift and other lifting devices				
09	Demonstrate proper and safe operation of forklift and other motor-operated vehicles				
10	Identify, ventilate and enter a confined space (OSHA 1910.146)				
11	Adhere to employer's emergency/hazard response procedures				
12	Identify location of first-aid materials				
13	Follow other applicable OSHA or employer safety regulations				
14	Adhere to employer fire-extinguishing procedures				
15	Using personal fall arrest equipment when working from an elevated position				
16	Other (please specify):				
17	Other (please specify):				
18	Other (please specify):				
B.	Minimize potential hazards				
	<i>The apprentice shall properly perform the following:</i>				
01	Maintain a safe and organized work area				
02	Identify location and demonstrate proper use of Material Safety Data Sheets (MSDS)				

Duties and Tasks		Date	JW Initials	Date	APR Initials
03	Demonstrate awareness of material moving equipment in area, such as forklifts, tuggers, cranes, hoists, etc.				
04	Follow employer-specific safety procedures for identifying and addressing potential hazards				
05	Other (please specify):				
06	Other (please specify):				
07	Other (please specify):				
C.	Demonstrate awareness of first aid, CPR, and blood borne pathogens				
	<i>Apprentices must properly identify and explain the following:</i>				
01	Demonstrate awareness of employer's first-aid procedures				
02	Demonstrate awareness of employer's procedures for blood borne pathogens				
03	Obtain CPR certification(s) required by employer				
04	Other (please specify):				
05	Other (please specify):				
06	Other (please specify):				

Comments and notes:

Competency 2:

Interpret Production Specifications

Duties and Tasks		Date	JW Initials	Date	APR Initials
A.	Identify employer production documents				
	<i>Apprentices must properly identify and explain the following:</i>				
01	Operational sequence				
02	Material requirements				
03	Tooling requirements				
04	Inspection requirements				
05	Machine set-up requirements (such as programming)				
06	Other (please specify):				
07	Other (please specify):				
08	Other (please specify):				
B.	Identify production requirements using employer production documents				
	<i>Apprentices must identify and explain the following:</i>				
01	Required processes				
02	Run time				
03	Inspection processes				
04	Required tooling or fixtures				
05	Other (please specify):				
06	Other (please specify):				
07	Other (please specify):				

Comments and Notes:

Competency 3:

Set Up, Inspect and Adjust Production Equipment

	Duties and Tasks	Date	JW Initials	Date	APR Initials
A.	Set up production equipment to meet production specifications				
	<i>Apprentices must properly perform the following:</i>				
01	Select and assemble tooling, fixtures and equipment according to the operational method sheet				
02	Install tooling				
03	Verify tooling offsets				
04	Install CNC program				
05	Verify CNC program				
06	Perform mechanical set-up				
07	Perform ergonomic set-up, such as proper work heights, weight limits, lifting techniques, appropriate lighting, etc.				
08	Interpret visual controls accurately				
09	Adjust set-up as needed				
10	Other (please specify):				
11	Other (please specify):				
12	Other (please specify):				
B.	Inspect production equipment and surrounding work area				
	<i>Apprentices must properly perform the following:</i>				
01	Visually inspect tooling, fixtures and equipment are properly assembled, installed and in working order				
02	Visually inspect surrounding work area to ensure it is free of hazards, such as spills, obstructions, and loose wires				
03	Ensure work is performed in designated area and does not obstruct adjacent traffic patterns and work areas				
04	Ensure proper ergonomic set-up				
05	Other (please specify):				
06	Other (please specify):				
07	Other (please specify):				

Duties and Tasks		Date	JW Initials	Date	APR Initials
C.	Adjust production equipment to meet and maintain production specifications				
	<i>Apprentices must properly perform the following:</i>				
01	Continually monitor all mechanical and visual controls				
02	Continually interpret all mechanical and visual controls				
03	Monitor product and recommend adjustments				
04	Adjust equipment and tooling to maintain product specifications				
05	Other (please specify):				
06	Other (please specify):				
07	Other (please specify):				

Comments and notes:

Competency 4:

Operate Production Equipment

Duties and Tasks	Date	JW Initials	Date	APR Initials
A. Works according to production schedules to meet job specifications				
<i>The apprentice shall properly perform the following:</i>				
01 Acquire the production schedule(s) for the piece(s) of equipment to be operated by the apprentice				
02 Interpret the production schedule accurately				
03 Follows standard work instructions properly				
04 Demonstrate comprehension of production capacity for machine(s)				
05 Complete Competency 3, A-C				
06 Other (please specify):				
07 Other (please specify):				
08 Other (please specify):				
B. Operates equipment safely and efficiently				
<i>The apprentice shall properly perform the following:</i>				
01 Complete Competency 1, A-C				
02 Complete Competency 3, A-C				
03 Develop and explain plan to achieve desired production expectation				
04 Monitor rate v. schedule (planned v. actual volume)				
05 Explain the relationship between equipment cycle times, quality and safe work pace				
06 Other (please specify):				
07 Other (please specify):				
08 Other (please specify):				
C. Monitor and inspect products and processes				
<i>The apprentice shall properly perform the following:</i>				
01 Complete Competency 2, A-B				
02 Identify and explain individual role in achieving product specifications				
03 Complete Competency 5, A-B				
04 Follow inspection guidelines established by quality department				
05 Adapts to process changes including cycle times, set-ups and tooling				

Duties and Tasks		Date	JW Initials	Date	APR Initials
06	Other (please specify):				
07	Other (please specify):				
08	Other (please specify):				
D.	Monitor and adjust equipment during operations as needed				
	<i>The apprentice shall properly perform the following:</i>				
01	Interpret and explain steps needed to achieve planned volume for quality and yield				
02	Complete Competency 3.C				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				
E.	Documents work, work processes and adjustments				
	<i>The apprentice shall properly perform the following:</i>				
01	Complete Competency 6, A-B				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				
F.	Shuts down equipment properly				
	<i>The apprentice shall properly perform the following:</i>				
01	Follow the employer's standard operating procedures for shutting down equipment properly				
02	Complete Competency 1, A-B				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				
G.	Disassembles equipment and components				
	<i>The apprentice shall properly perform the following:</i>				
01	Follow the employer's standard operating procedures for disassembling equipment properly.				
02	Complete Competency 1, A-B				
03	Complete Competency 7				
04	Other (please specify):				
05	Other (please specify):				
06	Other (please specify):				

Duties and Tasks		Date	JW Initials	Date	APR Initials
H.	Cleans up tooling, equipment and work spaces				
	<i>The apprentice shall properly perform the following:</i>				
01	Follow the employer's standard operating procedures for cleaning tools, equipment and work spaces properly.				
02	Complete Competency 1, A-B				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				
I.	Sanitizes equipment according to applicable standards				
	<i>The apprentice shall properly perform the following:</i>				
01	Follow the employer's standard operating procedures for sanitizing equipment properly.				
02	Complete Competency 1, A-B				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				

Comments and notes:

Competency 5:

Measure and Inspect Work Using Mechanical Tools and Testing Equipment

	Duties and Tasks	Date	JW Initials	Date	APR Initials
A.	Measure and visually inspect materials, products or parts, and finished goods accurately in accordance with job specifications				
	<i>Apprentices must properly select and properly use the most appropriate item in each of the following categories:</i>				
01	Hand tools				
02	Mechanical tools				
03	Hard gauges				
04	Electronic gauges				
05	Measuring devices				
06	Automated testing equipment				
07	Manual testing equipment				
08	Other (please specify):				
09	Other (please specify):				
10	Other (please specify):				
	<i>Apprentices must properly identify non-compliant stock in the following areas:</i>				
11	Form				
12	Fit				
13	Function				
14	Finish				
15	Other (please specify):				
16	Other (please specify):				
17	Other (please specify):				
B.	Apply math to measuring and inspection of work				
	<i>Apprentices must be able to interpret, add, subtract, multiply and divide the following:</i>				
01	Whole numbers				
02	Decimals				
03	Fractions				
04	Weights				

Duties and Tasks		Date	JW Initials	Date	APR Initials
05	Measures				
06	Conversions between English and metric systems				
07	Tolerance range				
08	Other (please specify):				
09	Other (please specify):				
10	Other (please specify):				

Comments and notes:

Competency 6:
Produce Quality Product

Duties and Tasks		Date	JW Initials	Date	APR Initials
A.	Verifies product quality following quality work instructions				
	<i>Apprentices must properly perform the following:</i>				
01	Explain the quality program(s) used by employer, including roles and responsibilities of the departments involved				
02	Explain the purpose, steps and expected results of the product inspection process, and the responsible parties				
03	Explain the tools required to perform the inspection process				
04	Verify and prepare inspection and documentation procedures. Update and maintain as needed.				
05	Conduct dimensional, visual, and mechanical inspection according to employer documentation and procedures. Please specify: Please specify: Please specify:				
06	Verify conformance to applicable procedure and other approved documents				
07	Explain characteristics of a non-compliant part and the effects on overall quality, including cost and rework				
08	Other (please specify):				
09	Other (please specify):				
10	Other (please specify):				
B.	Report and document results using applicable procedures				
	<i>Apprentices must properly perform the following:</i>				
01	Properly record results of inspection				
02	Provide acceptance or rejection				
03	Move compliant parts to next operation or shipment				
04	Tag parts that are non-conforming, if required				
05	Identify root cause of non-conforming product				
06	Recommend corrective action(s)				
07	Other (please specify):				
08	Other (please specify):				
09	Other (please specify):				

Duties and Tasks		Date	JW Initials	Date	APR Initials
C.	Apply cost of quality principles to jobs and manufacturing processes				
	<i>Apprentices must properly perform the following:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				
D.	Apply quality training to job duties and work processes				
	<i>Apprentices must properly perform the following, if applicable:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				

Comment and notes:

Competency 7:

Demonstrate Knowledge of Routine Equipment Maintenance

Duties and Tasks		Date	JW Initials	Date	APR Initials
A.	Inspect equipment				
	<i>Apprentices must properly perform the following:</i>				
01	Ensure machine is properly guarded				
02	Ensure work area is clean and safe				
03	Check water daily and adjust according to general equipment guidelines				
04	Check oil daily and adjust if necessary according to general equipment guidelines				
05	Check power daily and adjust if necessary according to general equipment guidelines				
06	Check air pressure daily and adjust if necessary according to general equipment guidelines				
07	Other (please specify):				
08	Other (please specify):				
09	Other (please specify):				
B.	Demonstrate mechanical problem solving abilities				
	<i>Apprentices must properly perform the following:</i>				
01	Identify when a machine is not working properly via sight, sound, smell, and touch (vibrations) of machine or part				
02	Identify cause(s), such as a part out of tolerance, jam, running out of stock, low fluid levels, etc., by following appropriate troubleshooting guide(s)				
03	Apply appropriate corrections, such as clearing jam, adding stock, and adding fluid				
04	Other (please specify):				
05	Other (please specify):				
06	Other (please specify):				
C.	Apply preventative maintenance practices effectively				
	<i>Apprentices must properly perform the following:</i>				
01	Use manufacturers service manual to identify proper service cycles and replacement parts				
02	Test safety equipment and features				
03	Maintains records regarding machine repairs				
04	Maintains records of machine servicing				

Duties and Tasks		Date	JW Initials	Date	APR Initials
05	Explain the purpose of collecting maintenance data				
06	Predict life cycle of wear parts using maintenance data				
07	Other (please specify):				
08	Other (please specify):				
09	Other (please specify):				
D.	Assist and communicate with maintenance personnel on equipment malfunctions				
	<i>Apprentices must properly perform the following:</i>				
01	Inform supervisor of equipment malfunctions				
02	Inform proper maintenance personnel of equipment malfunctions				
03	Record equipment malfunctions in log book				
04	Other (please specify):				
05	Other (please specify):				
06	Other (please specify):				

Comments and Notes:

Competency 8:

Demonstrate Knowledge of Inventory and Material Processes

Duties and Tasks		Date	JW Initials	Date	APR Initials
A.	Demonstrate awareness of employer's process for materials management				
	<i>Apprentices must explain the employer's process for the following:</i>				
01	Raw material flow to completed product				
02	Work order system				
03	Concept of supply and demand				
04	Inventory documentation process				
05	Logistics related to raw materials				
06	Customer materials				
07	Product bill of material				
08	Material supplier roles and responsibilities				
09	Other (please specify):				
10	Other (please specify):				
11	Other (please specify):				
B.	Demonstrate awareness of employer's process flow				
	<i>Apprentices must properly explain the following:</i>				
01	Company inventory flow and responsible departments				
02	Routing				
03	Inventory turns				
04	Just-in-time manufacturing concept				
05	Material movement process (ex. forklift, crane, etc)				
06	Other (please specify):				
07	Other (please specify):				
08	Other (please specify):				

Comments and notes:

Competency 9:

Demonstrate Continuous Improvement

Duties and Tasks		Date	JW Initials	Date	APR Initials
A.	Demonstrate knowledge of business motives and strategies for continuous improvement				
	<i>Apprentices must properly explain and give examples of and challenges to the following:</i>				
01	"Customer Satisfaction" from the customer and employer perspectives				
02	"Process Baseline"				
03	"Waste"				
04	"Added Value"				
05	"Improvement"				
06	"Organizational Empowerment"				
07	Other (please specify):				
08	Other (please specify):				
09	Other (please specify):				
B.	Participate in Continuous Improvement				
	<i>Apprentices must properly perform the following:</i>				
01	Identify and give examples of Lean Manufacturing tools (Ex. 5S, 6S, etc.)				
02	Actively participate in process improvement (Ex. suggesting improvements from production line; process improvement or self-directed work team, etc.)				
03	Report on the before-and-after differences to a process improvement and/or problem-solving project to management				
04	Identifies potential defects				
05	Other (please specify):				
06	Other (please specify):				
07	Other (please specify):				
C.	Applies root cause analyst to continuous improvement of manufacturing work processes				
	<i>Apprentices must properly explain and give examples of the following:</i>				
01	Root cause analysis				
02	Problem solving tools used by the employer to identify the root cause				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				

	Duties and Tasks	Date	JW Initials	Date	APR Initials
D.	Participates in cross-training opportunities				
	<i>Apprentices must properly perform the following:</i>				
01	Explain how cross training adds value to Customer Satisfaction, and give examples				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				

Comments and Notes:

Competency 10:

Demonstrate Knowledge of Trends and the Current State of the Business

	Duties and Tasks	Date	JW Initials	Date	APR Initials
A.	Apply basic business terms to manufacturing related work processes				
	<i>Apprentices must properly explain and identify examples of the following, or equivalent terms used by the employer:</i>				
01	Competitive advantage				
02	Global economy				
03	Lean manufacturing				
04	Six sigma				
05	Department and plant goals (Key Performance Indicators)				
06	Individual and/or team performance expectations				
07	Upstream				
08	Downstream				
09	Continuous improvement				
10	Customer satisfaction				
11	Cost of repair and rework				
12	SWOT or related analysis				
13	Supply chain				
14	Other (please specify):				
15	Other (please specify):				
16	Other (please specify):				
B.	Explain and identify competition and potential opportunities				
	<i>Apprentices must explain and identify competition and potential opportunities in each of the following scopes:</i>				
01	Internally				
02	Locally				
03	Regionally				
04	Nationally				
05	Globally				
06	Other (please specify):				
07	Other (please specify):				
08	Other (please specify):				

Duties and Tasks		Date	JW Initials	Date	APR Initials
C.	Participate in company leadership briefings				
	<i>Apprentices must properly perform the following:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				
D.	Relate the occupation and its responsibilities to keeping jobs in Wisconsin				
	<i>Apprentices must properly perform the following:</i>				
01	Complete Competency 9				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				
E.	Other (please specify):				
	<i>Apprentices must properly perform the following:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				
F.	Other (please specify):				
	<i>Apprentices must properly perform the following:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				
G.	Other (please specify):				
	<i>Apprentices must properly perform the following:</i>				
01	Other (please specify):				
02	Other (please specify):				
03	Other (please specify):				
04	Other (please specify):				
05	Other (please specify):				

Comments and Notes:

