

Work Process Schedule

WORK PROCESS SCHEDULE ¹		O*NET-SOC Code: 49-2094.00	
Mechatronics Technician (Basic, fitter-focus) (Alternate Title: Electrical and Electronics Repairers, Commercial and Industrial Equipment (Basic, fitter-focus))		RAPIDS Code: 2014CB	
Job Title:			
Level:		Specialization:	
Stackable Program ___yes ___no			
Base Occupation Name:			
Company Contact:			
Address:		Phone:	Email:
Apprenticeship Type: ____ Competency-Based ____ Time-Based ____ Hybrid		Prerequisites:	
JOB FUNCTION 1: Follows work processes closely to ensure a safe environment			
Competencies	Core or Optional	RTI	OJT
A. Identifies contact points within organization	Core		
B. Follows company policies and regulations	Core		
C. Recognizes safety, health, and environmental requirements in all departments	Core		
D. Recognizes safety machinery procedures	Core		

¹ See full framework for certifications and occupational pathways, cross-cutting competencies, and detailed job functions at <https://www.dol.gov/cgi-bin/leave-dol.asp?exiturl=https://www.urban.org/policy-centers/center-labor-human-services-and-population/projects/competency-based-occupational-frameworks-registered-apprenticeships&exitTitle=www.urban.org>.

JOB FUNCTION 2: Communicates and works well within a team environment			
Competencies	Core or Optional	RTI	OJT
A. Reliably follows the instructions of others	Core		
B. Willingly asks questions about things not fully understood	Core		
C. Works with due regard for the safety of others	Core		
D. Establishes a system of maintaining appropriate notes and reminders and completes any required logs, calibration records, etc.	Core		
E. Ensures proper communications between previous and next shifts, with both operations and supervision	Core		
F. Identifies problems and changes which could lead to problems by exchanging information with operators, supervisors, and others	Core		
G. Establishes trust and rapport with operators, supervisors, and others	Core		
JOB FUNCTION 3: Works capably with technical documentation			
Competencies	Core or Optional	RTI	OJT
A. Reads and interprets mechanical drawings	Core		
B. Reads and interprets fluid power (hydraulics/pneumatics)	Core		
C. Reads and interprets electrical drawings	Core		
D. Reads and interprets Process and Instrumentation Diagram (P&ID) and process control loop drawings	Core		
E. Reads and interprets vendor information	Core		
JOB FUNCTION 4: Works capably with a computer			
Competencies	Core or Optional	RTI	OJT
A. Uses a personal computer (PC) with appropriate windows or Linux operating systems	Core		
B. Uses basic computer office tools such as word processing, spreadsheets, and databases	Core		
C. Uses a browser and accesses the internet to retrieve information, configures wired and wireless networking, and installs applications	Core		

D. Uses a tablet device	Core		
E. Adds user accounts to a PC	Core		
F. Installs and uses antivirus software and follows a security policy	Core		
JOB FUNCTION 5: Installs and sets up a machine			
Competencies	Core or Optional	RTI	OJT
A. Locates a machine according to a print	Core		
B. Levels a machine (noncritical machines +/- 1/8")	Core		
C. Verifies circuit size and protection	Core		
D. Verifies proper voltage and phasing, grounding, and proper guards are in place	Core		
E. Installs proper mounts and raceways for adding a component (such as a sensor) or interlocking a machine	Core		
F. Properly sizes, installs, labels, and tests circuit conductors for adding a component or interlocking a machine	Core		
G. Properly lays out, cuts, drills, taps, and assembles a control station for an addition to a machine	Core		
H. Connects compressed air to a machine from a supply header and verifies proper air pressures and volumes for a machine	Core		
I. Adds pneumatic or hydraulic components and lines to a machine	Core		
J. Aligns and adjusts shafts, motors, belts, and chains on a machine	Core		
K. Verifies proper operation of all safety devices and circuits on a machine and checks and verifies circuits on a machine	Core		
L. Checks, lubricates, and powers up a machine	Core		
M. Verifies proper current draw of a machine and machine operation according to a sequence of operation	Core		
JOB FUNCTION 6: Performs work with material transfer conveyors			
Competencies	Core or Optional	RTI	OJT
A. Assembles rollers and belts	Core		
B. Adjusts height and distance to adjoining belts	Core		

C. Reverses direction of travel	Core		
D. Sets and adjusts tracking	Core		
E. Measures and adjusts belt speed	Core		
F. Determines if proper guards are in place	Core		
G. Adjusts and modifies guards and verifies safe operation meets OSHA standards	Core		
JOB FUNCTION 7: Understands, identifies, locates malfunctions, removes, replaces, adjusts, and returns to service industrial components			
Competencies	Core or Optional	RTI	OJT
A. Installs and troubleshoots key mechanical components	Core		
B. Installs and troubleshoots electrical components	Core		
C. Installs and troubleshoots electronic sensors and components	Core		
D. Installs and troubleshoots electrical control components	Core		
E. Installs and troubleshoots fluid power components	Core		
F. Installs and troubleshoots vacuum system components	Core		
JOB FUNCTION 8: Works with PLCs			
Competencies	Core or Optional	RTI	OJT
A. Installs basic components of a Programmable Logic Controller (PLC) including racks, ethernet, power supply, processor, and single point digital input/output modules	Core		
B. Connects power and digital input/output (I/O) wiring to a PLC	Core		
C. Selects and appropriately connects sinking and sourcing inputs and outputs	Core		
D. Configures and connects a laptop or other programming device to a PLC to upload, download, and save a program	Core		
E. Changes preset timer and counter values and applies and removes forces from a program	Core		
F. Troubleshoots a machine or process by observing PLC indicator lights and reviewing the PLC software ladder diagram (relays, timers, and counters)	Core		

G. Adds a function to a machine or process that requires wiring of additional I/O and basic ladder logic programming	Core		
H. Troubleshoots a PLC or a PLC-controlled machine or process by observing input and output conditions and monitoring the program in real time	Core		
I. Properly installs and terminates wiring for low-level analog signals	Optional		
J. Troubleshoots a machine or process utilizing a PLC or a Programmable Automation Controller (PAC) that implements closed loop process control and general purpose multi-axis motion control	Optional		
JOB FUNCTION 9: Performs work with robotic systems			
Competencies	Core or Optional	RTI	OJT
A. Exercises appropriate safety procedures for working with robots	Core		
B. Identifies types of robots	Core		
C. Programs robot movement with a teach pendant	Core		
D. Uploads, downloads, saves, and runs a robot program	Core		
E. Interfaces a robot to a conveyor system	Core		
F. Interfaces an end effector to a robot controller	Core		
G. Calibrates a robot to a conveyor system	Core		
H. Interfaces a robot to a vision system	Optional		
I. Sets up lighting for a vision system	Optional		
J. Teaches a vision system how to identify and orient good and bad products	Optional		
K. Troubleshoots a robot system, replaces components, and returns to operation	Core		
L. Performs repair procedures on a robot arm	Core		