SAMPLE TRAINING SCHEDULE

WILWorks Skilled Trades in Advanced Manufacturing is delivered through self-directed eLearning and hands-on training. The training period can be as little as eigth weeks, or up to 20 weeks. The outline below contains an overview of the topics that are covered. More details and an outline will be provided upon enrollment.

Program Set-Up (3 hours)

- An EMC Advancement Coach will meet with the employer, the trainer and the learner to craft a learning and hands-on
- training plan customized to your workplace.

Topic 1: Introduction to Manufacturing (1 hour orientation, 1.5 hours e-learning, hands-on training is optional for this topic) (2.5 hours)

- A virtual orientation introducing the program, expectations, roles and responsibilities of participants, employers and EMC, as well as sharing some tips for success.
- eLearning: The learner will be introduced to health and safety basics and gain knowledge and hear from industry professionals on manufacturing careers and skilled trades roles.
- Hands-on Training Example: Introduce the learner to maintenance safety policies and tools, such as lock out tag out, emergency stops and machine guarding.
- Hands-On Training Examples: Discuss with the learner career paths and opportunities in your facility and if there is anything they would like to know more about.

Topic 2: Introduction to Advanced Manufacturing (1.5 hours e-learning, hands-on training for this topic is optional) (1.5 hours)

- eLearning: Learners uncover the evolution and significance of automation in manufacturing, emphasizing skilled trades' role, and delves into robotics, additive manufacturing, data, and AI's impact on future manufacturing careers.
- Hands-On Training Examples: Show the learner examples of different advanced manufacturing being used around your facility. Encourage the learner to share and discuss their perspectives or ideas for possible advanced manufacturing in your facility.

Topic 3: Mechanical Power Transmissions (7 hours e-learning, 7 hours hands-on training) (14 hours)

- eLearning: The learner will learn about introductory content focusing on Mechanical Power Transmissions that will support the foundation for future learning as an Industrial Mechanic Millwright.
- Hands-On Training Example: Have learners engage with mechanical power transmissions by disassembling and reassembling gear systems or belt arrangements.

WILWorks SKILLED TRADES
Canada
Funded in part by the Government of Canada's Canadian Apprenticeship Strategy

SAMPLE TRAINING SCHEDULE

Topic 4: Pneumatics (1.75 hours e-learning, 1.75 hours hands-on training) (3.5 hours)

- eLearning: The learner will be exposed to a series of modules exploring the introductory fundamentals of pneumatics to support future learning as an Industrial Mechanic Millwright.
- Hands-On Training Example: The learner could assemble a basic pneumatic circuit using components like cylinders and valves according to a schematic diagram, gaining practical exposure to pneumatics and its operational principles.

Topic 5: Hydraulics (7.5 hours e-learning, 7.5 hours hands-on training) (15 hours)

- eLearning: The learner will be exposed to hydraulic system basics, including pressure, flow, fluids, reservoirs, piping, contamination prevention, pump types, and energy conversion, providing a comprehensive understanding of circuit functionality to support future learning as an Industrial Mechanic Millwright.
- Hands-On Training Example: Demonstrate to learners the various hydraulic components and concepts they have learned about, culminating in them assisting maintenance in scheduled hydraulic maintenance and troubleshooting.

Topic 6: Electrical Fundamentals (2.75 hours e-learning, 2.75 hours hands-on training) (5.5 hours)

- eLearning: The learner will learn introductory electrical concepts and formulas to support future learning in following an Industrial Electrician career pathway.
- Hands-On Training Example: During installations or inspections, a trainer explains electrical code adherence, highlighting safety, grounding, and wiring. Learners witness code's role in safe, effective systems.

Topic 7: Electrical Computer Controls (30 minutes e-learning, 30 minutes hands-on training) (1 hour)

- eLearning: The learner will be introduced to concepts around electronic signals commonly used by Industrial Electricians.
- Hands-On Training Example: Have the learner work with basic electronic components such as sensors, switches, and LEDs. The maintenance team member will guide the learner in wiring low voltage sensors and valves, connecting components, and demonstrating how these components respond to different signals.

Topic 8: Electrical Motor Controls (4.5 hours e-learning, 4.5 hours hands-on training) (9 hours)

- eLearning: Learners will gain exposure to electrical motor controls and topics ranging from DC motors to AC motors, nameplate data interpretation, electrical code compliance, and essential motor control components.
- Hands-On Training Example: A trainer explains the components of the control panel, such as start/stop buttons, motor starters, overload relays, and indicator lights. They walk the learner through the wiring, highlighting the purpose of each component.

Funded in part by the Government of Canada's Canadian Apprenticeship Strategy

SAMPLE TRAINING SCHEDULE

Topic 9: Programmable Logic Controllers (2.75 hours e-learning, 2.75 hours hands-on training) (5.5 hours)

- eLearning: Learners will focus on Programmable Logic Controllers (PLCs) in control systems, their benefits, components, applications, and advanced features within manufacturing.
- Hands-On Training Example: Walk learners through the components of a PLC in the facility, highlighting the input and output signals, network connectivity, and how the operator interface is used to control the PLC. If possible, demonstrate simple PLC logic and how sensor inputs control the logic and turn on actuator outputs.

For no additional cost, learners can also be enrolled in our popular Manufacturing Foundations and Lean Skills to earn two additional micro-credentials, and anyone involved in the hands-on training can receive complimentary access to our "Mentorship in Manufacturing" Course.

For best success, training should be broken down into segments throughout the placement period. To help assess which schedule and length works best for you, a chart has been created of what the weekly hours allocation would look like:

Training Period Length (Weeks)	Learner Hours Per Week	Trainer Hours Per Week
8	7.50	3.75
9	6.67	3.33
10	6.00	3.00
11	5.45	2.73
12	5.00	2.50
13	4.62	2.31
14	4.29	2.14
15	4.00	2.00
16	3.75	1.88
17	3.53	1.76
18	3.33	1.67
19	3.16	1.58
20	3.00	1.50

For more program details, please see our Employer FAQ, or contact Julie Smith, e-mail: jsmith@emccanada.org, phone 519-377-0235.

WIL Works SKILLED TRADES

Canada

Funded in part by the Government of Canada's Canadian Apprenticeship Strategy