

MANUFACTURING TECHNIQUES - MILLWRIGHT APPRENTICESHIP

Program: MWAP

Credential: Ontario College Certificate

Delivery: Full-time

Work Integrated Learning: Apprentice Placement

Length: 720 hours

Effective: Fall 2025

Location: Owen Sound

Description

This 720-hour program, consisting of three 240-hour levels, is designed to provide the apprentice with theoretical knowledge of all aspects of the industrial mechanic (millwright) trade as well as practical training necessary to complement the apprentice's on-the-job training experience.

Career Opportunities

Construction millwrights and industrial mechanics (NOC 7311) install, maintain, troubleshoot, overhaul and repair stationary industrial machinery and mechanical equipment. This unit group includes industrial textile machinery mechanics and repairers. Construction millwrights are employed by millwrighting contractors. Millwrights are employed in most industries in Canada: oil and gas, mining, automation and robotics, hospitals, food industries, and manufacturing.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. conduct predictive and preventative maintenance procedures on mechanical systems and industrial processes to prevent costly mechanical failure;
2. analyze and solve routine technical problems through the application of electrical, mechanical, and quality control procedures;
3. follow safe working procedures including the proper use of personal protective equipment to ensure a safe working environment;
4. apply knowledge of manufacturing materials, operations, and processes to produce components and maintain a high level of efficiency in manufacturing;
5. work responsibly and effectively in accordance with appropriate practices and procedures to prevent breakdowns;
6. interpret schematics and other technical documents to distinguish the manufacturing process, assembly of components, and specification of manufacturing tolerance;
7. measure, inspect, report on, and make recommendations for maintenance and machine refurbishment as part of the stakeholder quality systems and quality assurance program;
8. compile detailed and accurate documentation of all maintenance in order to have complete records;
9. analyze and problem solve to determine the root cause of machine failure, maintain effective functioning, and improve efficiency of operations.

External Recognition

Upon successful completion of their Level 3 in-school training, apprentices must complete the remainder of the required skills outlined in the Training Standard Log Book to qualify for their Certificate of Apprenticeship. Thereafter, they are eligible to write their Certificate of Qualifications exam for this Red Seal Trade. Graduates may be able to receive credit toward further education in related post secondary diploma, advanced diploma, or degree programs.

Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent, mature student status
- Prospective students must be registered Apprentices with the Ministry of Labour, Immigration, Training and Skills Development

Additional Information

Upon successful completion of their Level 3 in school training, these apprentices must complete the remainder of the required skills outlined in the Training Standard Log Book to qualify for their Apprenticeship Certificate. Thereafter, they are eligible to write their Certificate of Qualifications exam for this Red Seal Trade.

Graduates may be able to receive credit toward further education in related post-secondary diploma, advanced diploma, or degree programs.

Graduation Requirements

Students must successfully complete all three levels to receive a certificate.

- Industrial Mechanic Millwright - Level 1 Basic (IMMB)
- Industrial Mechanic Millwright - Level 2 Intermediate (IMMI)
- Industrial Mechanic Millwright - Level 3 Advanced (IMMA)

Graduation Eligibility

Students must successfully complete all required courses as noted below. Further details, if applicable, are noted under "Additional Information" above.

Program Tracking

Level 1 - Basic (IMMB)

Program Courses		Hours
IMMB 1010	Workshop Practice 1	48
IMMB 1011	Workshop Technology 1	56
IMMB 1012	Machine Technology 1	32
IMMB 1013	Rigging and Hoisting	24
IMMB 1014	Welding and Fabrication 1	32
IMMB 1015	Electrical and Electronic Controls 1	16
IMMB 1016	Drawings and Schematics 1	32
Hours		240
Total Hours		240

Level 2 - Intermediate (IMMI)

Program Courses		Hours
IMMI 1008	Drawings and Schematics 2	32
IMMI 1009	Workshop Practice 2	52
IMMI 1010	Power Transmission	56

IMMI 1011	Machine Technology 2	40
IMMI 1012	Welding and Fabrication 2	44
IMMI 1013	Electrical and Electronic Controls 2	16
Hours		240
Total Hours		240

Level 3 - Advanced (IMMA)

Program Courses	Hours	
IMMA 1011	Workshop Practice 3	54
IMMA 1012	Machine Technology 3	48
IMMA 1013	Fluid Power	81
IMMA 1014	Electrical and Electronic Controls 3	24
IMMA 1015	Welding and Fabrication 3	33
Hours		240
Total Hours		240

Code	Title
IMMA 1016	Industrial Mechanic Millwright Apprenticeship Exam Prep

Disclaimer: *The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs.*

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.