



**Skilled
Trades**
Ontario

**Métiers
spécialisés**
Ontario

Apprenticeship
Training Standard
Logbook

**Industrial Mechanic
Millwright**

433A

2010

Apprenticeship Training Standard

The Apprenticeship Training Standard or herein after referred to as “Logbook” is a document issued to Apprentices who sign a Registered Training Agreement in the Province of Ontario as an official record of training. It is to be used by the Apprentice and Sponsor/trainer to guide the process of skills development in a particular trade.

Training As An Apprentice

- ✓ Ensure you, your sponsor, and your witness sign a Training Agreement with the Ministry of Labour, Immigration, Training and Skills Development. Once it is registered, you will receive a copy of the registered Training Agreement for your records.
- ✓ Notify the local Service Delivery Office **immediately** if any changes to contact information or training agreement, especially if you change sponsors.
- ✓ Review the Logbook regularly with your trainer and sponsor to discuss your progress, ask questions, seek feedback and have the trainer **sign-off on competencies**
- ✓ Keep an accurate record of the hours you work.
- ✓ Attend classroom training when it is offered.
- ✓ Apply for the financial incentives for which you are eligible.



Completing Your Logbook

- ✓ **Complete the Sponsor Record Form** – A form must be completed for each Sponsor/Trainer used during your apprenticeship.
- ✓ **Confirm Skill Sign-off is Complete**
 - **You and your trainer** sign-off each required skill to confirm that you have demonstrated competency in that skill.
 - Shaded boxes in your Logbook mean the skills are optional and do not have to be confirmed by your trainer or sponsor. However, you are encouraged to complete them as part of your training.
- ✓ **Confirm Skill Set Sign-off is Complete**
 - After you and your trainer have signed-off all the required skills in a skill set, your sponsor signs the signature box on the form in **Appendix C – “Skill Set Completion for Sponsors”** to confirm your completion of all competencies within each skill set.

This document is the property of the apprentice named inside and represents the official record of your training. For information about completing your apprenticeship, see inside of back cover.



Apprentice Name: _____

Address: _____

Phone Number: _____

Email Address: _____

Trade: _____

Training Agreement # (for Compulsory and Non-Compulsory trades):

STO Account No. (for Compulsory trades only):

This document is the property of the Apprentice named herein and represents the official record of their training.

If you have questions about the use of this Logbook or about your Apprenticeship program, contact your local Service Delivery Office (see Appendix D in this book) or the Employment Ontario hotline at: 1-800-387-5656.

Apprenticeship Pathway to a Certificate of Qualification

Phase 1: Registration

Submit Application for Apprenticeship Training through the on-line portal or to local Service Delivery Office

For on-line portal, please follow instructions for registration. You will need to create a *My Ontario* account to access online services.

Training agreement signed and registered by both apprentice and sponsor

Access your Apprenticeship Training Standard Logbook**
skilledtradesontario.ca/about-trades/trades-information

** This is the official record of your training progress. You are responsible for keeping it up-to-date.

Complete on-the-job training

Demonstrate and receive sign-off on the competencies/skills in your Apprenticeship Training Standard Logbook

Complete in-school training

Attend and complete the in-class training set out in the Curriculum Training Standard

Apprentices eligible to apply for apprenticeship incentive grants (Red Seal trades) and loans.

Review and finalize your logbook with your sponsor

Submit proof of apprenticeship completion
via email, in-person or digital portal

Your Apprenticeship Training Standard Logbook details completion requirements. Submit the following:

- completed Apprenticeship Training Standard Logbook with signatures
- proof of hours

Certificate of Apprenticeship is issued

Trades without examination

CofA is the final step of the program

Trades with examination
(compulsory and non-compulsory trades)*

Provisional Certificate of Qualification issued for a 12 month term

To prepare for the CofQ examination download the Provincial and/or Red Seal Exam preparation guides.

Make payment for your Certificate of Qualification examination

Call to make a payment
(647-847-3000 or 1-855-299-0028)

Schedule a date to write your Examination

To schedule your examination, contact your local Service Delivery Office.

Pass Certificate of Qualification examination

Apprentices eligible to apply for Apprenticeship Completion Grant (Red Seal trades) or Apprentice Completion Bonus (non-Red Seal)

Certificate of Qualification is issued

Upon completion, Sponsors may be eligible for Apprenticeship grants, incentives, bonuses or tax credits

Phase 2: Apprenticeship

Phase 3: Certification

* For a list of trades subject to a certification examination, visit: skilledtradesontario.ca

Table of Contents

Foreword: Purpose, Terms and Conditions of the registered Training Agreement.....	1
Trade Specific Resources and Links	2
Methodology-Standard Development.....	2
Introduction to the Logbook.....	3
Roles and Responsibilities	4
Roles and Responsibilities of the Apprentice	5
Roles and Responsibilities of Sponsors and Trainers	6
Health and Safety.....	7
Apprenticeship Program Summary/Guidelines.....	10
Scope of Practice	10
Program Guidelines.....	10
Program Requirements	11
Compulsory and Non-compulsory Classification	11
Skills for Success Summary	11
Standard of Performance	12
Training the Apprentice - Tips for Apprentices, Sponsors and Trainers	13
Notice of Collection of Personal Information	15
List of Trainers	16
Skill Sets	17
U4600.0 Protect Self and Others.....	17
U4601.0 Communicate.....	20
U4602.0 Use Drawings and Schematics	21
U4603.0 Use Hand and Power Tools	22
U4604.0 Use Machine Tools	25
U4605.0 Use Precision Measuring Equipment.....	28
U4606.0 Use Materials and Fasteners	30
U4607.0 Apply Lubricants	32
U4608.0 Rig and Hoist	34
U4609.0 Install and Maintain Material-Handling Systems	36
U4610.0 Install and Maintain Power Transmission Systems.....	39
U4611.0 Install and Maintain Compressors.....	41

U4612.0	Install and Maintain Pumps.....	43
U4613.0	Install, Commission, and Maintain Prime Movers and Machinery.....	44
U4614.0	Weld, Braze, and Solder.....	48
U4615.0	Install and Maintain Bearings, Seals, and Packing	50
U4616.0	Install and Maintain Fans and Blowers	53
U4617.0	Install and Maintain Fluid Power Systems	55
U4618.0	Perform Preventive and Predictive Maintenance	59
Definitions		62
Apprentice		62
Ready to Write Your Exam?		65
Instructions for Recording a Change in Sponsor		66
Sponsor Record #1		67
Change of Sponsor Record #2.....		68
Change of Sponsor Record #3.....		69
Change of Sponsor Record #4.....		70
Appendix A — Instructions for Apprenticeship Program Completion		71
Appendix B — Apprentice Completion Form.....		72
Appendix C — Skill Set Completion for Sponsors.....		73
Appendix D — Local Service Delivery Offices in Ontario		74
Competency Analysis Profile (CAP) Chart		i

Please Note: This Standard has been revised to reflect the visual identity of Skilled Trades Ontario (STO) which replaced the Ontario College of Trades on January 1, 2022. The content of this Standard may refer to the former organization; however, all trade specific information or content remains relevant and accurate based on the original date of publishing.

Please refer to STO's website: skilledtradesontario.ca for the most accurate and up to date information. For information about BOSTA and its regulations, please visit [Building Opportunities in the Skilled Trades Act, 2021 \(BOSTA\)](#).

Any updates to this publication are available on-line; to download this document in PDF format, please follow the link: [Skilled Trades Ontario.ca](https://skilledtradesontario.ca).

© 2022, Skilled Trades Ontario. All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission from Skilled Trades Ontario.

Maintained with transfer to Skilled Trades Ontario 2010 (V100)

Foreword: Purpose, Terms and Conditions of the registered Training Agreement

Purpose:

- Prior to starting official apprenticeship activities, the apprentice, sponsor and a witness are required to sign a Training Agreement.
- The Training Agreement that you have signed is an important legal document that outlines your responsibilities as an apprentice and the responsibilities of your sponsor.
- Once registered, this training agreement (or contract) marks the start of your formal agreement between the apprentice, the sponsor and the Ministry.
- For compulsory trades, the apprenticeship registration document must be accessible when working.

The Apprentice agrees:

- **To inform the local Service Delivery Office of any change to your contact information or change in sponsor within 7 days;**
- To follow the Sponsor's and Trainer's lawful instructions and make every effort to acquire the skills identified in the Logbook for the Trade which is part of the apprenticeship program established by Skilled Trades Ontario for the trade;
- To obtain written verification from the Sponsor and the Trainer(s) that the requirements in the Logbook for the trade have been met.
- When you receive an "Offer of Classroom Training", confirm your attendance by following the instructions in the offer. Failure to do so may result in losing your opportunity to attend school which delays the completion of your apprenticeship.

The Sponsor agrees:

- To ensure that the Apprentice is provided with the training required as part of the apprenticeship program established by Skilled Trades Ontario for this trade;
- To review the progress of training with the Apprentice, and with the Trainer(s) where the Sponsor and the Trainer are not the same party.
- Release your apprentice from work to attend in-school training without penalty to the apprentice.
- To maintain the journeyperson/apprentice ratio for your trade, if applicable.
- To monitor their apprentice(s) progress
- To ensure that the Trainer(s) verifies, in writing, when each skill identified in the Logbook for the trade has been successfully completed by the Apprentice;
- To contact the Ministry should any changes in your capacity to train, your contact information, or your apprentice's status in the program change.

Trade Specific Resources and Links

Trade Specific Resource	Link
Red Seal Program	red-seal.ca
Apprenticeship in Ontario	ontario.ca/page/apprenticeship-ontario
Employment Ontario	employmentontario.ca
Service Canada	servicecanada.gc.ca
<i>Building Opportunities in the Skilled Trades Act, 2021</i>	Building Opportunities in the Skilled Trades Act, 2021, S.O. 2021, c. 28 - Bill 288 (ontario.ca)
Ministry of Labour, Immigration, Training and Skills Development	Ministry of Labour, Immigration, Training and Skills Development ontario.ca
Exam Preparation Guide	Exam Resources – Skilled Trades Ontario
Skills Zone (Ontario Skills Passport)	http://www.skillszone.ca/

**Please note, all website addresses are current at time of printing*

Methodology-Standard Development

A standard is developed with a broad group of trade representatives who form the initial working group. This includes subject matter experts/ tradespeople/ instructors and employers from a cross section of the sector/industry, with varying years of work experience in the field. The working group reviews, develops and recommends revision to the content of the standard. Their role also involves harmonizing and updating other supporting content for the product.

An essential part of the standard development is the validation process. This is the opportunity to have a broader representation of the sector provide feedback on the content of draft standard. This process is conducted in various ways and may include sending out a survey or the draft document (or both) directly to the sector. The comments received are reviewed by the working group and revisions are made as required based on a consensus model.

Introduction to the Logbook

This “on-the job” Logbook is the training standard for Industrial Mechanic Millwright 433A and was developed by Skilled Trades Ontario in consultation with representatives from industry. It identifies all the skills associated with and required to learn the trade.

The Logbook is divided into skill sets, which are further divided into skills. These skill sets and skills are written in statements that describe what the Apprentice must perform and to what standard, in order to be considered competent in that skill.

The successful performance of these skills is tracked in the Logbook. Once achieved, this skills’ sign-off, along with the completion of in-school program requirements or equivalent, is how the apprenticeship program is completed and apprentices receive a Certificate of Apprenticeship.

The Sponsor/trainer and Apprentice are required to sign-off and date each skill after the Apprentice has demonstrated proficiency in these skills. However, if a skill is shaded, it is optional and does not need to be signed-off, though it has been defined as a part of the scope of practice for the trade.

All practices described in this standard must be performed by the apprentice according to the specific criteria identified. In general, the standard of performance for this trade is to be performed according to all applicable jurisdictional codes and standards and all health and safety standards must be respected and observed.

All skills within the Apprenticeship Training Standard are to be performed, as applicable, according to and in compliance with the following:

- Occupational Health and Safety Legislation and Regulations;
- Other applicable legislation, regulation, codes and standards;
- Industry best practices;
- Company policies and procedures.

The information presented in this standard is, to the best of our knowledge, current at time of printing and is intended for general application. Please refer to the Skilled Trades Ontario website for the most accurate and up-to-date information: skilledtradesontario.ca

Roles and Responsibilities

Under the [Building Opportunities in the Skilled Trades Act, 2021 \(BOSTA\)](#)

Skilled Trades Ontario (STO) is responsible for:

- Establishing and maintaining qualifications;
- Establishing Apprenticeship Programs and other training programs including training Standards, curriculum standards and certifying examinations;
- Issuing certificates for the purposes of this Act such as Certificates of Qualification;
- Maintaining a Public Registry for compulsory trades skilledtradesontario.ca/public-register/;
- Determining whether the experience and qualifications obtained by applicants for a certificate of qualification who do not complete an apprenticeship are equivalent to those received through completing an apprenticeship (Trade Equivalency Assessments)
- Promoting the skilled trades and conducting research.
- Conducting research and evaluate whether a trade should be prescribed as a trade for the purposes of this Act and to make recommendations on these matters to the Minister.

Ministry of Labour, Immigration, Training and Skills Development (MLITSD) is responsible for:

- Classifying trades as compulsory trades;
- Prescribing scopes of practice for trades;
- Approving which persons may provide in-class training for apprenticeship programs (TDAs);
- Registering Training Agreements;
- Providing those who successfully complete an apprenticeship program with a certificate of apprenticeship (CofA);
- Administering examinations, including certifying examinations;
- Promoting the skilled trades and conducting research;
- Exercising such other powers and perform such other duties and functions as are provided for in this Act or the regulations.

For any matter related to your registered Training Agreement or completing your apprenticeship, you must contact your local Service Delivery Office.

Roles and Responsibilities of the Apprentice

An Apprentice is an individual who has entered into a registered Training Agreement (refer to Foreword: *“Purpose, Terms and Conditions of TA” page 1*) with a Sponsor to receive training in a trade as part of an apprenticeship program established by Skilled Trades Ontario. As an Apprentice, you have certain roles and responsibilities to follow throughout your apprenticeship training:

1. As an Apprentice, you signed the Training Agreement and have entered into a contract with the Ministry of Labour, Immigration, Training and Skills Development and your Sponsor.
2. If you are registered as an Apprentice in a compulsory trade, your name will automatically appear in the Skilled Trades Ontario Public Register.
3. You are responsible for informing the staff at your local Service Delivery Office regarding changes to the following:
 - Your Sponsor’s address;
 - Your name and address; and/or,
 - Your Sponsor, including starting employment with a new Sponsor
4. As an Apprentice, you are responsible for completing skills or skill sets in this Logbook (as detailed in the *“Eligibility for Apprenticeship Program Completion”* section of this document) and ensuring that they are dated and signed by both you and your Trainer.
5. Once you have demonstrated competency in all the mandatory skills and received a sign off on each skill by your sponsor/trainer, you must have the Skill Set Completion Form completed and signed by your current Sponsor.
6. Submit your Logbook to your local Service Delivery Office.
7. Present your Apprentice Completion Form (Please refer to Appendix B), along with your authorized Logbook to your local Service Delivery Office.

Roles and Responsibilities of Sponsors and Trainers

Sponsors are responsible for ensuring all terms are met as per the registered Training Agreement. They are named on the registered Training Agreement as the entity responsible for ensuring Apprentices receive the training required as part of an apprenticeship program. As a signatory to this agreement, they are designated as the 'Signing Authority' for the Apprentice's Skill Set Completion Form and are required to attest to successful achievement by signing the appropriate box at the completion of each skill set. Some sponsors may also act as the Trainer.

A **Trainer** is an individual who oversees the performance of a task and sets the workplace expectations and practices for the Apprentice.

In compulsory trades, a Trainer must hold a valid Certificate of Qualification and be registered with Skilled Trades Ontario.

In non-compulsory trades, a Trainer is an individual who holds one of the following:

- A Certificate of Qualification;
- A Certificate of Apprenticeship in the trade; or,
- Has completed both the workplace-based training (competencies and/or hours as applicable) and classroom training components of the trade's apprenticeship program; or,
- Has workplace experience equivalent to the apprenticeship program) and has the skills outlined in the Logbook.

Competency means being able to perform to the required standard (please refer to *"Introduction to the Logbook"*). Trainers/Sponsors and Apprentices are required to sign-off and date the skills in the Logbook following each successful acquisition. The Logbook forms a record of this achievement.

The Trainer must provide their signature based on their assessment and professional judgment that the apprentice is competent in the skills described above. The Trainer's signature is not a general warranty or guarantee of the apprentice's future conduct.

Sponsors participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each skill set.

Health and Safety

Safe working procedures and conditions, accident prevention and the preservation of health are of primary importance for apprenticeship programs in Ontario. These responsibilities are shared and require the joint efforts of government, sponsors, employers, supervisors, workers, apprentices and the public to achieve the goal of making Ontario's workplaces safe and healthy.

The [Occupational Health and Safety Act](#) (OHSA) provides us with the legal framework and the tools to do this. It sets out the rights and duties of all parties in the workplace, placing ultimate responsibility on the employer for the health and safety of workers (in this case apprentices) by ensuring procedures, controls, and training are established for dealing with workplace hazards. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury, illness or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to or cause an accident injury or illness.

A sponsor who is not the employer is reminded that the employer has legal responsibilities respecting health and safety over the apprentice who is their worker. The sponsor should encourage safe work habits and adherence to the employer's occupational health and safety requirements for the workplace.

It is generally recognized that a positive attitude about safety in partnership with health and safety competency contributes to an accident-free environment. Everyone will benefit as a result of a healthy attitude towards the prevention of accidents.

Workers and apprentices can be exposed to a multitude of hazards and, therefore, should be familiar with the Occupational Health and Safety Act and regulations.

The Internal Responsibility System:

One of the primary purposes of the Occupational Health and Safety Act (OHSA) is to facilitate a strong Internal Responsibility System (IRS) in the workplace. To this end, the OHSA lays out the duties of employers, supervisors, workers, apprentices, constructors and workplace owners.

Workplace parties' compliance with their respective statutory duties is essential to the establishment of a strong IRS in the workplace.

Simply put, the IRS means that everyone in the workplace has a role to play in keeping workplaces safe and healthy. Workers and apprentices in the workplace who see a health and safety problem such as a hazard or contravention of the OHSA in the workplace have a statutory duty to report the situation to the employer or a supervisor. Employers and supervisors are, in turn, required to address those situations and acquaint workers with any hazard in the work that they do.

The IRS helps support a safe and healthy workplace. In addition to the workplace parties' compliance with their legal duties, the IRS is further supported by well-defined health and safety policies and programs, including the design, control, monitoring and supervision of the work being performed.

Roles and Responsibilities under the Occupational Health and Safety Act

Employer's Responsibilities include but are not limited to the following:

- Instruct, inform and supervise workers and apprentices to protect their health and safety.
- Appoint competent persons as supervisors.
- Inform a worker, apprentice, or a person in authority, about any hazard in the workplace and train them in the handling, storage, use, disposal and transport of any equipment, substances, tools, material, etc.
- Take every precaution reasonable in the circumstances for the protection of a worker/apprentice.
- In workplaces in which more than five workers are regularly employed, prepare and post a written occupational health and safety policy and set up and maintain a program to implement it.
- Prepare and post policies with respect to workplace violence and workplace harassment and develop programs supporting workplace harassment and workplace violence policies.
- Ensure knowledge of applicable legislative, regulatory, codes and standards so requirements to be followed are clear to all workers/apprentices.

Trainer/Supervisor Responsibilities include but are not limited to the following:

- Ensure that a worker or apprentice works in compliance with the Act and regulations.
- Ensure that any equipment, protective device or clothing required by the employer is used or worn by the worker or apprentice.
- Advise a worker/apprentice of any potential or actual health or safety dangers known by the supervisor.
- Take every precaution reasonable in the circumstances for the protection of workers.

Worker/Apprentice Responsibilities include but are not limited to the following:

- Work in compliance with the Act and regulations.
- Use or wear any equipment, protective devices or clothing required by the employer.
- Report to the employer or supervisor any known missing or defective equipment or protective device that may endanger the worker or another worker.
- Report any hazard or contravention of the Act or regulations to the employer or supervisor.
- Not remove or make ineffective any protective device required by the employer or by the regulations.
- Not use or operate any equipment or work in a way that may endanger any worker.

The Three Rights of Workers/Apprentices

The OHSA gives workers and apprentices three important rights:

1. The right to know about hazards in their work and get information, supervision and instruction to protect their health and safety on the job.
2. The right to participate in identifying and solving workplace health and safety problems either through a health and safety representative or a worker member of a joint health and safety committee.
3. The right to refuse work that they believe is dangerous to their health and safety or that of any other worker in the workplace.

Ministry of Labour, Immigration, Training and Skills Development

The Ministry of Labour, Immigration, Training and Skills Development conducts periodic inspections of workplaces to ensure that safety acts and regulations are being followed. Please direct any questions to the Occupational Health and Safety Contact Centre at 1-877-202-0008.

Apprenticeship Program Summary/Guidelines

Scope of Practice

The Scope of Practice for the trade of Industrial Mechanic Millwright is set out in section 73 of Ontario Regulation 875/21 under BOSTA and reads as follows:

73. The scope of practice for the trade of Industrial Mechanic Millwright includes installing, troubleshooting, maintaining and repairing industrial mechanical machinery and equipment.

*While the Logbook draws on the scope of practice regulation (Section 73 of Ontario Regulation 875/21 under BOSTA). The Logbook does not purport to add to or modify the scope of practice as provided in regulation. *

Program Guidelines

On-the-Job Training Duration

Industry has identified 7280 hours as the benchmark necessary for any Apprentice to become competent in the skills required. There may be circumstances in which the duration varies from this guideline.

In-Class Training Duration

Industry has identified 720 hours of in-school training as the duration necessary for an Apprentice to complete the in-school curriculum for this program.

Total Training Hours

8000 hours

Journeyman to Apprentice Ratio

Industry Recommended Ratios:

While some of the trades regulated under BOSTA are subject to Journeyman to Apprentice ratios set out in regulation, this trade is not one of them. Instead, **industry has recommended a Journeyman to Apprentice ratio guideline of 1 Journeyman (or individual who is deemed equivalent to a journeyman) to 1 Apprentice** as the ratio necessary for an Apprentice to be properly trained on the job in this program.

Program Requirements

Compulsory and Non-compulsory Classification

Regulations under the Building Opportunities in the Skilled Trades Act, 2021, classify each trade as either “compulsory” or non-compulsory.” This trade is non-compulsory.

It is the responsibility of an Apprentice to maintain a training record in the form of a Logbook. The Sponsor and Trainer are required to sign-off when competencies in the trade are achieved.

Skills for Success Summary

Skills for Success are needed in a quickly changing world for work, learning and life. They are foundational for building other skills and important for effective social interaction. Everyone benefits from having these skills as they help individuals get a job, progress at their current job and change jobs. They also help individuals become active members of their community and succeed in learning.

Through extensive research and consultations, the Government of Canada launched the new Skills for Success model renewing the previous Essential Skills framework to better reflect the needs of the current and future labour market.

The occupational specific Essential Skills profiles are available online. These will be updated over time to align with the new Skills for Success model found here: [Skills for Success model](#)

Standard of Performance

In general, the standard of performance for the trade of Industrial Mechanic Millwright are to be performed, as applicable, according to and in compliance with the following:

Industry Safety Standards which are based upon:

- Occupational Health and Safety Legislation and Regulations;
- Jurisdictional legislation and regulations, codes and standards (municipal bylaws etc.)
- Company policies and procedures
- All applicable manufacturers specifications and engineering specifications

Training the Apprentice - Tips for Apprentices, Sponsors and Trainers

Tips for Apprentices

Remember, it takes time to learn. The following is a list of additional tips and tools to help make the most of your apprenticeship training:

- Practice safe work procedures early to create good habits;
- Use your Logbook as a journal to keep track of the skills you have achieved;
- Review your training plan with your Training Consultant, Trainer, or Sponsor;
- Discuss your training needs with your Trainer and/or Sponsor;
- Listen to the suggestions of your Trainer;
- Ask your Trainer questions if you are unsure of any skill you need to perform or any tools or equipment you need to use to perform your duties;
- Show enthusiasm and develop good work habits; and,
- Upon demonstration of competency, ensure that you and your Trainer sign-off the individual skills.

To get the most from this mentoring experience, request exposure to the full scope of the trade; meet regularly with your Sponsor/Trainer to discuss your progress, ask questions and seek feedback.

Tips for Sponsors

- Select Trainers with good communication skills and who work well with others;
- Ensure that the Apprentice always works under the direction of or has access to a qualified Trainer;
- Encourage Trainers to take upgrading courses (e.g. Train the Trainer, Mentor, Coach, etc.);
- Set out clear expectations and involve both the Apprentice and Trainer in developing the training plan
- Encourage safe work habits;
- Allow time for the Trainer to train and demonstrate skills to the Apprentice;
- Provide opportunities and time for the Apprentice to learn the trade;
- Ensure that the Apprentice receives the varied on-the-job trade training experience outlined in this document;
- Recognize good performance;
- Observe frequently;
- Provide constructive feedback and conduct regular performance reviews involving the Apprentice and Trainer;
- Use the Logbook as a monitoring tool and a part of regular performance evaluations; and,
- Complete the Skill Set Completion Form once the Apprentice has demonstrated competency in the skills.

- The detailed content listed for each skill is not intended to represent an inclusive list; rather, it is included to illustrate the intended direction for the skill acquisition.

Tips for Trainers

Trainers are responsible for ensuring the Apprentice is developing the skills outlined in this document. Here is a list of tips and tools to help Trainers in their supervision of Apprentices:

- Demonstrate model safe work habits;
- Provide opportunities and time for the Apprentice to learn the trade;
- Treat Apprentices fairly and with respect;
- Review the Logbook with the Apprentice and develop a training plan;
- Set out clear expectations and recognize good performance;
- Expose Apprentices to the full scope of the trade by providing training on the skills outlined in this document;
- Encourage and respond to all questions;
- Be patient;
- Explain, show and demonstrate the skill;
- **Meet regularly with the Apprentice to discuss the apprentice's progress**
- Provide continuous feedback;
- Sign-off skills when your Apprentice demonstrates competency, and,
- Use the Logbook as a guide to evaluate competence in each skill area. By using the Logbook, Trainers will be able to guide the process to and assist Apprentices to develop skills outlined in this document.

The best mentoring experience is when an Apprentice is given as much training/exposure to the full scope of the trade as possible. If this is not possible, help them to determine other ways this may be possible.

Notice of Collection of Personal Information

1. At any time during your apprenticeship training, you may be required to show this Logbook to the local Service Delivery Office. You will be required to submit the signed Apprenticeship Completion form to the Service Delivery Office in order to complete your program. The Service Delivery Office will use your personal information to administer and finance Ontario's apprenticeship training system, including confirming your completion and issuing your Certificate of Apprenticeship.
2. The Service Delivery Office will disclose information about your program completion and your Certificate of Apprenticeship to Skilled Trades Ontario, as it is necessary for Skilled Trades Ontario to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry of Labour, Immigration, Training and Skills Development under the authority of the *Building Opportunities in the Skilled Trades Act, 2021 (BOSTA)*.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre
Ministry of Labour, Immigration, Training and Skills Development
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084

List of Trainers

Trainer's Name (Please Print)	Trainer's Signature	Date of start with Trainer (day/month/year)

U4600.0 Protect Self and Others**General Performance Objective**

Protect self and others by practicing safe work habits; applying machinery and equipment lockout and de-energizing procedures; wearing, adjusting, and maintaining personal protective equipment and clothing; complying with established confined space safety procedures; following company procedures for applying first aid; demonstrating awareness of fire-prevention techniques; and performing all work in compliance with company safety and housekeeping standards.

Skills

- 4600.01 Practise safe work habits** by installing, troubleshooting, and maintaining industrial equipment; ensuring compliance with all applicable safety legislation; and applying correct body mechanics when bending, lifting, or moving heavy loads, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4600.02 Apply machinery and equipment lockout and de-energizing procedures** to mechanical, electrical, hydraulic, and pneumatic systems before commencing maintenance and overhaul procedures, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4600.03 **Wear, adjust, and maintain personal protective equipment and clothing**, including eye, ear, hand, and foot protection to ensure correct fit and optimum protection, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4600.04 **Comply with established confined space safety procedures**, such as the use of breathing apparatus, before commencing and during work, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4600.05 **Follow company procedures for applying first aid** to self and others, and seek immediate assistance in emergency situations, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4600.06 **Apply fire-prevention techniques** by assessing the potential for fire posed by the work performed and obtaining the required fire-prevention and firefighting equipment, in accordance with government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4600.07 **Perform all work in compliance with company safety and housekeeping standards** including the use of protective barriers and guards, and report all accidents and hazards to ensure the safety of self and others.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4601.0 Communicate**General Performance Objective**

Communicate in the workplace by liaising and communicating with fellow workers, company representatives, and other trades; and writing overall maintenance and job-specific technical reports.

Skills**4601.01 Communicate with fellow workers, company representatives, and other trades** to convey information and promote trade competency.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4601.02 Write maintenance and job-specific technical reports, in accordance with company policies and job requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4602.0 Use Drawings and Schematics**General Performance Objective**

Use drawings and schematics by reading and interpreting engineering, machine, and component drawings and symbols; drawing or sketching assembly and component parts; reading and interpreting reports and technical and manufacturers' manuals; and reading and interpreting schematics and diagrams.

Skills

4602.01 Use engineering, machine, and component drawings and symbols when overhauling and assembling machinery and equipment, ensuring compliance with industry standards and specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4602.02 Draw or sketch assembly and component parts using orthographic, isometric and sectional views; using equipment or techniques, such as free hand, drafting tables, or computer- aided drafting; and adhering to relevant dimensions and notes, so that sketches or drawings can be used for production of parts by competent tradespersons.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4602.03** **Use reports and technical and manufacturers' manuals** when overhauling machinery and updating equipment, in accordance with industry standards and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4602.04** **Use schematics and diagrams** when assembling, maintaining, repairing, and troubleshooting fluid power systems to specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4603.0 Use Hand and Power Tools

General Performance Objective

Use hand and power tools including selecting, maintaining, and using fastening tools, hand tools, metal cutting tools, measurement tools, portable power tools, and impact tools and/or powder- actuated tools.

Skills

- 4603.01** **Use fastening tools** such as sockets, spanners, wrenches, torque multipliers, and manual and/or hydraulic torque wrenches, in installing, maintaining, and repairing machinery; by adhering to established bolt-tightening sequences, and maintain them at a functional condition in accordance with manufacturers' specifications, torque and tensioning charts, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4603.02 Use hand tools such as screwdrivers, chisels, hammers, punches, pliers, levers, scrapers, and pry bars, in a safe and efficient manner when installing, maintaining, and repairing machinery, and maintain them at a functional condition in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4603.03 Use metal cutting tools such as files, hand saws, drills, power sanders and chippers, reamers, taps, tapping chucks, dies, and snips, to manufacture and shape components, and maintain them at a functional condition in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4603.04 **Use measurement tools** such as tapes, rules, plumb bobs, and squares when measuring and aligning components, and maintain them at a functional condition in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4603.05 **Use portable power tools** such as shears, magnetic base drills, grinders, and hand millers, and maintain them at a functional condition in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4603.06 **Use impact tools and/or powder-actuated tools** safely and efficiently, and maintain them at a functional condition in accordance with manufacturers' specifications, company policy and government legislation.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4604.0 Use Machine Tools**General Performance Objective**

Use machine tools by setting them up; reading and applying feed, speed, thread cutting, drill, and tap chart information and specifications; applying specific trade calculations and formulas; setting up and operating pedestal or radial drilling machines; setting up and operating cut-off and band saws; setting up and performing lathe operations; setting up and performing milling operations; setting up and operating machine tool accessories; and setting up and operating fabrication equipment.

Skills

4604.01 Use feed, speed, thread cutting, and drill and tap chart information and specifications to set machine tool controls for a variety of machine tool operations, and calculate and apply imperial/metric conversions as required.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4604.02 Apply specific trade calculations and formulas when machining, fitting, setting up, laying out, aligning, and establishing gear ratios, ensuring compliance with engineering drawings and manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.03 Operate pedestal or radial drilling machines using such equipment as clamps, vices, jigs, and angle plates to drill, ream, tap, countersink, and bore by setting up machines and using high-speed steel (H.S.S.) and carbide drills and reamers to job specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.04 Operate cut-off and band saws using material-specific blades, feeds, speeds, and coolants, by setting up and using band saws in accordance with drawing specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.05 Perform lathe operations, such as turning, boring, facing, threading, cutting tapers, knurling, grinding, and forming, by setting up lathe and cutting using high-speed steel (H.S.S.) and carbide tool bits, and by machining to within plus or minus 0.002" or within prescribed tolerances and specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.06 Perform milling operations, such as slotting, facing, boring, and cutting keyways, by setting up machine and using high-speed steel (H.S.S.) and carbide tool bits, and by machining to within plus or minus 0.002" or within prescribed tolerances and specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.07 Use machine tool accessories, such as dividing heads, taper turning attachments, three- and four-jaw chucks, magnetic chucks, faceplates, surface grinders, wheel dressing attachments, and drill and tool sharpening attachments, by setting them up and operating them in accordance with drawing specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4604.08 Operate fabrication equipment, such as presses (e.g., brakes, benders, ironworkers, shears, power rolls, and punches) by setting them up and using them in accordance with drawings specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4605.0 Use Precision Measuring Equipment**General Performance Objective**

Use precision measuring equipment by using and maintaining internal and external micrometers; using and maintaining verniers; using and maintaining precision alignment instruments; using and maintaining other precision measuring devices; using measuring and testing instruments and equipment; and defining bench marks and turning points.

Skills

- 4605.01 Use internal and external micrometers** by making minor adjustments and calibrations, taking linear measurements and reading measurements in imperial and metric accurately to within plus or minus 0.0005" or the metric equivalent.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4605.02 Use verniers** by making minor adjustments, taking inside and outside measurements to an accuracy of plus or minus 0.001", transferring linear measurements using vernier caliper and vernier height gauges to an accuracy of plus or minus 0.001", and reading calipers to an accuracy of plus or minus 0.001".

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4605.03 Use precision alignment instruments, such as laser, dial indicators, and precision and optical levels, to align machinery and component couplings to prescribed tolerances.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4605.04 Use precision measuring devices, such as V-blocks, gauge blocks, and surface and angle plates, for laying out, solving angles, verifying accuracy, and comparing and transferring measurements according to industry standards.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4605.05 Use measuring and testing instruments and equipment, such as voltmeters, ammeters, and megameters, according to standards of diagnostic inspection of control systems.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4605.06 Use bench marks and turning points when using rods, tapes, and precision scales, applying transits for transferring lines and turning angles, such as horizontal and vertical, to industry specifications in degrees, minutes, and seconds.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4606.0 Use Materials and Fasteners

General Performance Objective

Use materials and fasteners by using ferrous, non-ferrous, and specialty alloy materials; non-metallic materials; applying the screw thread system; and installing fastening devices in accordance with manufacturers' specifications and industry standards.

Skills

4606.01 Use ferrous, non-ferrous, and specialty alloy materials, including stainless steel, in the manufacture of engineering components from drawings and sketches.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4606.02 **Use non-metallic materials**, such as nylon, rubber and plastic to manufacture components from drawings and sketches by using specialized tools to lay out, cut, or machine non-metallic materials to manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4606.03 **Apply the screw thread system** by selecting from Unified, American, National, Acme, Metric, and Pipe thread systems; single or multi start; and left or right hand, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4606.04 **Install fastening devices**, such as bolts, nuts, screws, dowels, rivets, circlips, and chemical fasteners, in accordance with manufacturers' specifications, drawings, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4607.0 Apply Lubricants**General Performance Objective**

Apply lubricants and greases for specific applications by identifying the characteristics and composition of various lubricants; selecting and using specific oils and greases; identifying, selecting, and using special-purpose lubricants; installing, maintaining, and repairing machinery and plant lubrication systems; and handling and storing all lubricants and greases in accordance with manufacturers' specifications and industry standards.

Skills

4607.01 Identify the characteristics and composition of lubricants from charts and standards, and apply to specific applications and conditions, in compliance with manufacturers' recommendations.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4607.02 Apply oils and greases to reduce friction and wear, cool moving parts, prevent corrosion, and seal out dirt and other contaminants, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4607.03 Apply special-purpose lubricants for extremely high or low temperature applications, extreme pressure (E.P.) applications, and high-load applications, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4607.04 Install, maintain, and repair machinery and plant lubrication systems, such as pumps, flow indicators, spray valves, and metering and dispensing equipment, and lay out all piping and fittings, in accordance with drawings and manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4607.05 Handle and store all lubricants and greases in compliance with safety and environmental legislation and according to company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4608.0 Rig and Hoist**General Performance Objective**

Rig and hoist by planning lifts; selecting and using rigging and hoisting equipment; inspecting and maintaining all rigging and hoisting equipment; demonstrating standard hand signals and radio signal procedures; and using manual or power hoisting equipment.

Skills

4608.01 Plan lifts by assessing load characteristics, such as size and shape, determining load weight and centre of gravity, and removing obstacles and dangers when using load charts in accordance with government regulations, rigging manuals, manufacturers' specifications, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4608.02 Use rigging and hoisting equipment, such as ropes (fibre and wire), slings, thimbles, shackles, spreader bars, chains, hooks, hoists, rope blocks, winches, and jacks, by selecting appropriate equipment and applying it in accordance with government regulations, rigging manuals, manufacturers' specifications, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4608.03 **Inspect rigging and hoisting equipment** by identifying and applying removal from service criteria in accordance with government regulations, rigging manuals, manufacturers' specifications, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4608.04 **Use standard hand signals and/or radio signal procedures** to convey directions and instructions to co-workers and equipment operators, ensuring that rigging and hoisting operations are performed safely in accordance with safety regulations.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4608.05 **Use manual or power hoisting equipment**, such as jibs, A-frames, overhead crane winches, jacks, lift trucks, attachments, and power elevating work platforms, in accordance with safety regulations, manufacturers' recommendations, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4609.0 Install and Maintain Material-Handling Systems**General Performance Objective**

Install and maintain material-handling systems, including installing, aligning, and maintaining conveyor systems; installing and maintaining conveyor components; splicing conveyor belts; checking tracking at idlers and pulleys; inspecting and maintaining overhead cranes and hoists and monorail systems; installing and maintaining material-handling valves; and installing and maintaining material-handling piping and duct work in accordance with manufacturers' specifications and company policy.

Skills

- 4609.01 Install, align, and maintain conveyor systems**, such as belt, roller, bucket, chain, chutes, screens, screw, and air conveyors, to ensure installation and maintenance are in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4609.02 Install and maintain conveyor components**, such as belts, chains, sprockets, idlers, take-up units, scrapers, vibrators, skirting, and unloading systems, by adjusting and tracking conveyor systems, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4609.03 **Splice conveyor belts** using such methods as metal fasteners, plate and button fasteners, two plate fasteners, and vulcanisation, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4609.04 **Inspect tracking at idlers and pulleys** after splicing or installation, and adjust in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4609.05 **Inspect and maintain overhead cranes and hoists and monorail systems** by checking wheels, trolley system, alignment, and tracking; by inspecting hooks, sheaves, wire rope, chains, and brakes; and by load testing and recording data, in accordance with safety legislation and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4609.06 **Install and maintain material-handling valves**, such as ball, butterfly, check, cone, gate, globe, plug, and needle, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4609.07 **Install and maintain material-handling piping and duct work**, such as flanges, couplings, clamps, and hangers, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4610.0 Install and Maintain Power Transmission Systems**General Performance Objective**

Install and maintain power transmission systems by determining gear ratios, horsepower requirements, and final speeds; installing, aligning, and maintaining power transmission components; installing, aligning, and maintaining couplings; and installing and maintaining keys, splines, bushes, and tapered bushings, in accordance with manufacturers' specifications.

Skills

4610.01 Calculate gear ratios, horsepower requirements, and final speeds of power transmission systems by using calculations, charts and specification data to ensure correct installation and alignment, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4610.02 Install, align, and maintain power transmission belts including flat and timing belts, V-belts, pulleys, and chains, by calculating belt and chain tension, and by checking and adjusting alignment after installation, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4610.03 **Install, align, and maintain power transmission components** such as shafts, speed reducers, gears, brakes, clutches, ball screws, harmonic drives, and cams and followers, using conventional and special tools and instruments to ensure installation and operation are in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4610.04 **Install, align, and maintain couplings**, such as mechanical, magnetic, fluid, and centrifugal, using specialized tools to ensure installation and operation are in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4610.05 **Install and maintain keys, splines, bushes, and tapered bushings** using conventional and specialized tools (i.e. broaches, pullers) in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4611.0 Install and Maintain Compressors**General Performance Objective**

Install and maintain compressors, including installing and maintaining rotary and reciprocating compressors; installing and maintaining primary filters and coolers; installing and maintaining separators and receivers; installing, maintaining, and repairing unloading, distribution, and lube systems; and installing, maintaining, and inspecting dryers and coolers, in accordance with manufacturers' specifications, government regulations and company policy.

Skills

4611.01 Install and maintain rotary and reciprocating compressors by checking orientation and availability of services, air intakes, hydro, water, drainage, ventilation, and interfaces; and replacing worn or defective intake, discharge, check, unloading, blow down, bleed and safety valves, oil separator packs, control pressure regulators, pressure switches, thermostatic controls, fusible plugs, and inter-and after-coolers, in accordance with manufacturers' specifications, government regulations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4611.02 Install and maintain primary filters and coolers by inspecting, replacing, or maintaining filter medium, tubes, gaskets, single and multi pass coolers, and heat exchangers, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4611.03 Install and maintain separators and receivers by inspecting, replacing, or maintaining check, drain, isolating bypass, and moisture damp valves; pressure gauges; bypass set-ups; and pipe systems, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4611.04 Install, maintain, and repair unloading, distribution, and lube systems by inspecting, replacing, or maintaining unloaders, including diaphragms, springs, valves, seals, control linkages, and lubrication systems, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4611.05 Install, maintain, and inspect dryers and coolers by conducting leak tests, purging and recharging systems, setting up pressure regulators, troubleshooting using gauges, and caring for and storing liquids and gases, in accordance with government regulations, manufacturers' specifications, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4612.0 Install and Maintain Pumps**General Performance Objective**

Install and maintain pumps, including installing and maintaining hydrodynamic (non-positive displacement) pumps; installing, maintaining, and repairing hydrodynamic pump components; installing, maintaining, and repairing hydrostatic (positive displacement) pumps; and installing, maintaining, or repairing hydrostatic pump components.

Skills

4612.01 **Install and maintain hydrodynamic pumps**, such as axial flow, centrifugal, and mixed-flow pumps, by inspecting, replacing, and repairing pumps, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4612.02 **Install, maintain, and replace hydrodynamic pump components**, such as impellers, casings, wear rings, shaft, shaft sleeves, packing, and seals, by inspecting and replacing components, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4612.03 **Install, maintain, and repair hydrostatic pumps**, such as gear, vane, piston, diaphragm, and screw, by inspecting, maintaining, or replacing, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4612.04 **Inspect, maintain, and replace hydrostatic pump components**, such as vanes, rotors, pistons, cylinders, swash plates, diaphragms, and seals, by inspecting, maintaining, and replacing components, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4613.0 Install, Commission, and Maintain Prime Movers and Machinery

General Performance Objective

Install, commission, and maintain prime movers and machinery by laying out and preparing base or foundation; installing prime movers; levelling and aligning machinery; securing machinery; conducting final checks on prime movers and machinery; starting up prime mover and ancillary equipment and run-in; recording footprint/signature of machinery; and, maintaining and repairing prime movers.

Skills

4613.01 **Lay out and prepare base or foundation** by locating centre and datum lines, reference points, and benchmarks; selecting and installing chemical and expanding anchors; and rechecking base or foundation dimensions and bolt locations, ensuring they are in accordance with drawings, plans, job specification, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4613.02 Install prime movers by using safe rigging and moving procedures to position on base; ensuring base and feet are free from dirt and burrs; maintaining coupling gap as per specifications; and checking component alignment, in accordance with manufacturers' specifications, engineered drawings and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.03 Level and align machinery by checking for soft foot using such methods as computer, laser, optical, reverse dial, or piano wire alignment methods; checking and adjusting pipe strain by allowing for thermal growth; and levelling base or components using shims, jacks, bolts, wedges, pads, and hydraulic jacks, in accordance with manufacturers' specifications, engineered drawings and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.04 Secure machinery using anchors, bolts, fasteners, grouting, and epoxy resins, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.05 Conduct final checks on prime movers and machinery by checking that all service lines are clear; inspecting and adjusting auxiliary oil systems and cooling water to ensure proper operation; detecting and repairing leaks; ensuring that safety devices, relief valves, and lockouts are installed and operating properly; and blowing down and priming the system, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.06 Start up and run-in prime mover and ancillary equipment, adhering to manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.07 Record footprint/signature of machinery by using vibration instruments and record readings.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4613.08 Maintain and repair prime movers, such as internal combustion, electrical, or turbines, by installing mechanical, hydraulic, and electronic governors; maintaining internal auxiliary oil systems; balancing critical rotating parts; repairing and/or replacing intake and exhaust valves and seats, steam, gas, and motor turbine inlet valves, and overspeed trip valves; inspecting and maintaining fuel systems, filters, pumps, injectors, remote start systems, including batteries and air receivers, starters and alternators; mating surfaces for warpage; steam cutting, burring, and bruising cylinder bores and liners; and adjusting intake and exhaust valves and timing assembly, in accordance with manufacturers' specifications, schematics and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4614.0 Weld, Braze, and Solder**General Performance Objective**

Weld, braze, and solder by setting up and operating electric welding equipment; setting up and operating gas welding and cutting equipment; reading, interpreting, and applying all applicable welding symbols and instructions; laying out, tacking, and fabricating materials; and using furnace, flame, or oven to heat-treat or stress-relieve metal and alloys in accordance with welding standards and procedure specifications.

Skills

- 4614.01 Prepare for welding** by cleaning, grinding and preparing ferrous and non-ferrous materials and selecting the appropriate welding process for the metal type, so that the material to be welded is prepared in accordance with appropriate welding standards and procedure specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4614.02 Set up and operate electric arc welding equipment**, such as shielded metal arc welding (SMAW), Gas Metal Arc Welding (GMAW) [MIG], and Gas Tungsten Arc Welding (GTAW) [TIG] types, by assembling consumables, machines and associated equipment, ensuring it is in operating order setting up equipment and welding materials in position to produce welds that will pass visual inspection.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4614.03 Set up and operate gas welding, coating and cutting equipment, such as that for gas fusion welding, spray welding, and oxyacetylene and plasma cutting to produce clean cuts free from slag and heat distortion, and to complete welding, brazing, and soldering operations to pass visual inspection.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4614.04 Apply welding symbols and instructions, for welding and fabricating using drawings and weld specifications so that welds are carried out in accordance with appropriate specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4614.05 Fabricate materials by laying out and assembling components, and tacking them in place so that weld distortion is minimized during welding operation.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4614.06 Heat-treat and stress-relieve metal and alloys using furnace, flame and oven, and observing colour changes, using colour charts, and using air, oil, and water-cooling medium for specific application, in accordance with manufacturers' specifications, drawings, and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4615.0 Install and Maintain Bearings, Seals, and Packing

General Performance Objective

Install and maintain bearings, seals, and packing by installing and maintaining plain and journal bearings; installing and maintaining bearing housings, installing and maintaining bearings; inspecting bearings; installing static, dynamic, and rotary seals; applying chemical sealants; and installing and removing packing in accordance with manufacturers' specifications.

Skills

4615.01 Install and maintain plain and journal bearings, such as sleeve, radial, linear, and axial, by such methods as bluing, scraping, and machining to fit clearances and tolerances, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4615.02 **Install and maintain bearing housings** for specific application, including floating, pillow, flange, and split, and using shims, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4615.03 **Install and maintain bearings**, such as anti-friction, radial, axial, ball, roller, taper, spherical, self aligning, linear, needle, and split bearings, using such equipment as bearing ovens, induction heaters, demag units, hot oil baths, arbour presses, pullers, and hydraulic jack sets, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4615.04 **Inspect bearings** by checking for wear and clearances and other defects, such as spalling, brinnelling, scoring, and cracking, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4615.05 **Install static, dynamic, and rotary seals**, such as gaskets, O-rings, labyrinth seals, magnetic bearing housing seals, mechanical seals, and dry gas seals, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4615.06 **Apply chemical sealants**, including liquid gasket materials, plastic, or liquid metal fillers, for static or dynamic conditions, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4615.07 **Install and remove packing** for specific applications by measuring and cutting packing as required, and install safely without damage to other components, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4616.0 Install and Maintain Fans and Blowers**General Performance Objective**

Install and maintain fans and blowers by installing and maintaining single- and multi-stage fan and blower systems; inspecting, maintaining, and troubleshooting single- and multi-stage fan and blower components; troubleshooting and balancing airflow in the system; and troubleshooting, inspecting, and replacing worn or defective controls.

Skills

- 4616.01 Install and maintain single- and multi-stage fan and blower systems,** such as axial, centrifugal, and propeller types, for ventilation, material handling, wet and dry dust collection, induced forced and balanced draft, and cooling tower applications, ensuring correct driver and alignment installation to prescribed standards and drawings.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4616.02 Maintain and troubleshoot single- and multi-stage fan and blower components** by checking wheel and impeller clearances and balance; maintaining oil, lubrication, and bearing cooling systems; inspecting and replacing worn bearings, filters, and shaker systems; and maintaining pedestals or mountings, in accordance with manufacturers' specifications and government regulations.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4616.03 **Troubleshoot and balance airflow in the system** by using capacity and demand factors and such methods as visual inspection, airflow indicators, and vibration analysis, in accordance with manufacturers' specifications and government regulations.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4616.04 **Troubleshoot, inspect, and replace worn or defective controls**, such as electrical/electronic, pneumatic, and thermal louvered linkages; by inspecting and maintaining solenoid controls, airflow indicators, and vacuum and pressure gauges, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4617.0 Install and Maintain Fluid Power Systems**General Performance Objective**

NOTE: This skill set encompasses both hydraulic and pneumatic systems. An apprentice can complete this skill set with work experience in either one (or both) of these systems.

Install and maintain fluid power systems by applying fluid power formulas and principles; installing and maintaining control valves; installing and maintaining regulators; identifying, selecting, and using fluids; installing, starting up, maintaining, and repairing various types of power units and associated fluid power circuitry; installing and maintaining filters, strainers, and related contamination-control equipment; laying out, installing, and maintaining fluid conductors; installing and maintaining linear and rotary actuators; setting up and adjusting variable proportional control valves; setting up, maintaining, and adjusting logic servo-proportional control systems; and troubleshooting fluid power systems.

Skills

4617.01 Apply fluid power formulas and principles, such as force, weight, mass, friction, flow rate, pressure, and energy, using Boyle's, Charles's, and Pascal's laws, and Bernoulli's principle, during installation and maintenance procedures of fluid power systems in accordance with accepted scientific principles.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

- 4617.02** **Install and maintain control valves**, such as spool or poppet types for pressure control operations and sequence or unloading operations, and directional valves, including sliding spool, poppet, or rotary types, by using and applying proper port configurations and varied controls, which may include manual, mechanical, electrical, and pilot; installing flow control valves in the proper location; metering in and out; and compensating for pressure and temperature variations, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4617.03** **Install and maintain regulators** by adjusting pressure filters, allowing for drainage of moisture and lubricators, and using oils and adjusting oil feeds, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4617.04** **Select and replace fluids**, such as petroleum based, fire resistant, and synthetic, for specific applications, by inspecting and replacing fluid when required, in accordance with manufacturers' recommendations and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4617.05 **Install, start up, maintain, and repair power units and associated fluid power circuitry**, including accumulators, ensuring air/oil is bled from the system, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4617.06 **Install and maintain filters, strainers, and related contamination-control equipment** to ensure a clean, contamination-free fluid-power system, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4617.07 **Lay out, install, and maintain fluid conductors**, such as piping, tubing, hosing, fittings, brackets, expansion joints, and insulation, by inspecting and replacing worn or defective components to ensure an efficient, leak proof and clean fluid-power system, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4617.08** **Install and maintain linear and rotary actuators**, such as single- and double-acting, single- and double-rod types, seals and packing, cup seals and O-rings, piston motors, vane motors, gear motors, lobe, and diaphragm, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4617.09** **Set up and adjust variable proportional control valves**, such as directional, flow, pressure, potentiometers, and proximity switches, in accordance with manufacturers' specifications and company policy.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

- 4617.10** **Set up, maintain, and adjust logic servo-proportional control systems** in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4617.11 Troubleshoot fluid power systems, including system operation, pressures, valves, filters, and electrical/electronic controls, by following a logical sequence of elimination and using appropriate test instruments and equipment, in accordance with manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

U4618.0 Perform Preventive and Predictive Maintenance

General Performance Objective

Perform preventive and predictive maintenance by using and maintaining fixed and portable vibration and balancing equipment; selecting and using various types of non-destructive test equipment; using computer and maintenance software packages; using and maintaining noise- monitoring instruments; and using and maintaining temperature, pressure, and fibre optic monitoring instruments in accordance with manufacturers' specifications and government regulations.

Skills

4618.01 Use and maintain fixed and portable vibration and balancing equipment by reading and interpreting monitors for velocity, frequency, and amplitude, and establishing and recording footprint/signature of machinery.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

4618.02 **Select and use various types of non-destructive test equipment**, such as dye penetrant, magnaflux, ultrasonic, fluoroscopic, and used oil analysis, in accordance with manufacturers' specifications and government regulations.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4618.03 **Use computer and maintenance software packages** to administer, record, schedule, and monitor preventive and predictive maintenance activities, in accordance with manufacturers' specifications and company standards.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4618.04 **Use and maintain noise-monitoring instruments** to determine and prevent potential mechanical, electrical, and fluid power failure.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

4618.05 Use and maintain temperature, pressure, and fibre optic monitoring instruments, such as pressure gauges, bourdon tube gauges, electronic gauges, and bi-metal and mercury gauges, by using and maintaining fibre optic and infra-red instruments to inspect and replace worn or defective components; and by using and calibrating precision testing instruments and equipment to prescribed standards and manufacturers' specifications.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

Definitions

Apprentice

- An individual who, pursuant to a registered Training Agreement, is receiving or is to receive training in a trade that is required as part of an apprenticeship program
- Holds a Training Agreement in either a compulsory or non-compulsory trade;
- Are subject to any ratios that have been set out in regulation and or recommended by industry for their trade(s);
- Remain as an Apprentice until they receive their Certificate of Apprenticeship

BOSTA

Building Opportunities in the Skilled Trades Act, 2021 (BOSTA)

Certificate of Apprenticeship (C of A)

A certificate issued to individuals who have demonstrated that they have completed an apprenticeship program in Ontario.

Certificate of Qualification (C of Q)

A certificate issued to an individual who has completed an apprenticeship or equivalent AND passed the Certificate of Qualification examination.

Competence

The ability of an individual to perform a skill, consistently without assistance, in the workplace as set out in the Logbook.

Competency Analysis Profile (CAP Chart)

A chart that identifies the training needs of an individual trade and details the skills/skill sets that must be demonstrated during an apprenticeship program.

Journeyperson

Journeyperson means an individual who holds a certificate of qualification (in a compulsory or non-compulsory trade) and/or an individual who practices as a journeyperson in a non-compulsory trade who does not hold a certificate of qualification and has equivalent experience in that trade.

Mandatory Skill

Status assigned to unshaded individual skills, skill sets or general performance objectives which must be signed-off for the Apprentice to complete their program.

Optional Skill

Status assigned to shaded individual skills, skills sets or general performance objectives for which sign-off is not required for the Apprentice to complete the program.

Provisional Certificates of Qualification

- A Provisional Certificate of Qualification is issued to an individual who has obtained a Certificate of Apprenticeship (in both compulsory and non-compulsory trades) in a program that has a Certificate of Qualification examination, to which the individual has not yet passed the Certificate of Qualification examination.
- A Provisional Certificate of Qualification shall have the prescribed term or, if no term is prescribed, a term of one year.
- In a compulsory trade, the Provisional Certificate of Qualification allows a person to continue working legally in the trade for up to 12 months while they work to pass the certifying exam.
- Individuals with a Provisional Certificate of Qualification are subject to any ratios that have been set out for their trade(s).

Ratios

For the purpose of an Apprenticeship program, a ratio is the maximum number of Journeypersons to Apprentices. The purpose of ratios is to provide consistent supervision, training and continuity of work.

Red Seal Program

The Interprovincial Standards Red Seal Program (also known as the Red Seal Program) was established more than 50 years ago to provide greater mobility across Canada for skilled workers and represents a standard of excellence for industry. Through the program, individuals are able to obtain a Red Seal endorsement on their provincial/territorial certificates by achieving 70% or higher on an interprovincial Red Seal examination.

The Interprovincial Standards Red Seal Program acknowledges their competence and ensures recognition of their certification throughout Canada without further examination. There are currently over 50 Red Seal designated trades. **The Red Seal Program is recognized as the interprovincial *standard of excellence* in the skilled trades.** The Interprovincial Standards Red Seal Program is a partnership between the Government of Canada, the Provinces, the Territories and various stakeholders.

Sign-off

Signature of the Sponsor of record, or an individual to whom that Sponsor has delegated signing authority, (e.g. Trainer) indicating an Apprentice's demonstration of competence.

Skill

Individual competency/task described in the Logbook.

Skill Sets

Group or selection of individual skills found in the Logbook.

Skill Set Completion for Sponsors

Listing for all skill sets and includes space for sign-off by Sponsor of record.

Sponsor

Means a person that has entered into a registered Training Agreement under which the person is required to ensure that an individual is provided with workplace-based training in a trade as part of an apprenticeship program.

Sponsor of Record

Refers to the Sponsor documented as being signatory to the registered Training Agreement or Contract of Apprenticeship. In order for a Sponsor to be considered for the training of Apprentices, they must identify that the workplace has qualified persons or the equivalent on site, and can identify that the workplace has the tools, equipment, materials, and processes which have been identified by the Industry representatives for the trade.

Trainer

An individual who oversees the performance of a task and sets the workplace expectations and practices for the Apprentice. For a compulsory trade, a qualified Trainer is an individual who holds a Certificate of Qualification. In a non-compulsory trade, a Trainer is an individual who either holds a CofQ, CofA, or is considered equivalent.

Ready to Write Your Exam?

Many of the skilled trades in Ontario have a final certification examination that you must pass to become certified in your trade. Passing the examination gives you the right to hold yourself out as a Journeyperson and receive a Certificate of Qualification in your trade.

There are two types of trade certification examinations in Ontario:

1. Provincial (Ontario) examinations - which lead to a Certificate of Qualification.
2. Red Seal examinations – which lead to a Certificate of Qualification with an Interprovincial Red Seal endorsement.

If a trade is designated as Red Seal in Ontario, you will be writing the Red Seal examination. To access the Red Seal preparation guide please visit: red-seal.ca

Ontario's Exam Preparation Guide

[Exam Resources – Skilled Trades Ontario](#)

Basic Examination Details for You to Know

- You will have **up to four hours to write your examination.**
- Accommodations must be requested and approved prior to scheduling your examination.
- You can leave the examination centre if you complete the examination in less than four hours.
- Exam questions are multiple choice with four options from which you must choose the correct answer. Your examination may have between 90 and 150 multiple choice questions.
- You need a mark of 70% to pass.

Scheduling Your Examination

The examination scheduling process is currently outlined in detail on the Skilled Trades Ontario website: [Exam Scheduling – Skilled Trades Ontario](#)

Remember these 3 basic steps:

1. Confirm your eligibility to write the examination with Skilled Trades Ontario.
2. Contact Client Services at Skilled Trades Ontario to pay your examination fee.
3. Contact the local Service Delivery Office to schedule your examination in their examination centre: <https://www.ontario.ca/page/employment-ontario-apprenticeship-offices>

Instructions for Recording a Change in Sponsor

1. Record your first sponsor's information in Sponsor Record #1 – this would be the sponsor who has signed your initial apprenticeship Training Agreement for this trade.
2. If you do change sponsors prior to completing this apprenticeship, please contact your local Service Delivery Office immediately to update your sponsor record.
3. Please make sure you record all the information regarding any additional sponsors of record towards your apprenticeship using the Sponsor Records on the following pages (if applicable).

You must fill out a Change of Sponsor Record each time you change your sponsor.

Sponsor Record #1

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #2

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #3

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #4

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Appendix A — Instructions for Apprenticeship Program Completion

Once an Apprentice has completed all the classroom training and benchmark on-the-job hours specified for the trade and has acquired all the mandatory skills included in this Logbook.

The Apprentice and the Sponsor complete the Apprentice Completion Form and the Skill Set Completion for Sponsors Form located on the following pages.

1. They sign the forms and submit them to their local Service Delivery Office. To find the closest office, check the contact information at ontario.ca/page/employment-ontario-apprenticeship-offices or call the *Employment Ontario* toll free number at (1-800-387-5656).
2. For All Trades: All mandatory skills (or the combination indicated in the completion requirements for the trade) in the Logbook must be signed-off. The recommended hours are a benchmark. If the Sponsor is completing the Apprentice before the industry recommended training hours are done, staff may request further information regarding the Apprentice's on-the-job training. An example of a request would be a letter from the Sponsor confirming the Apprentice worked for some time in the trade before the initial Training Agreement was registered, thereby acquiring some skills beforehand.

If Apprentices are submitting the completion request form and supporting documentation to their local Service Delivery Office by mail, fax, or email (as a scanned document), they should not include their Logbook; if they are presenting this form in person at the local Service Delivery Office, they should bring their Logbook with them.

After staff verifies all the information in the completion request, they may contact either the Apprentice or the Sponsor for further information or documentation. Once the completion has been confirmed, the local Service Delivery Office will issue a Certificate of Apprenticeship to the Apprentice.

Skilled Trades Ontario will receive notification of this completion.

- If the Apprentice has completed a program in a **compulsory trade**, Skilled Trades Ontario will automatically register the Apprentice for a Provisional Certificate of Qualification to continue to work legally for one year while preparing for the certification examination.
- If an Apprentice completes their apprenticeship in a **non-compulsory trade** and there is a Certificate of Qualification exam, they must write and pass the exam to receive a Certificate of Qualification from Skilled Trades Ontario.

For permission to schedule an exam once completion is confirmed, the individual must first contact the Skilled Trades Ontario Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification examination fee. Once you have paid your exam fee with Skilled Trades Ontario, book your exam by contacting your nearest Employment Ontario local Service Delivery Office.

Appendix B — Apprentice Completion Form

Please fill out both sides of this form, including the Skill Set Completion for Sponsors (see back of form). Once both sides are completed, submit the form to your local Service Delivery Office (find contact information at ontario.ca/page/employment-ontario-apprenticeship-offices or by calling Employment Ontario at (1-800-387-5656).

Apprentice Information	
Name (print)	
Client ID # Issued by Ministry	
Telephone Number(s)	

Sponsor Information	
Legal Name	
Address	
Telephone Number(s)	
Sponsor's Signing Authority (<i>print name</i>)	
E-mail Address	

Program Information	
Trade Name	
Number of hours required as per Training Agreement (<i>hours-based trades only</i>)	
Hours completed? (<i>documentation attached</i>)	Yes () No () Not applicable ()
Classroom training completed or exempt?	Yes () No () Not applicable ()

I hereby confirm that the information submitted on both sides of this form is true and accurate.

X _____
Apprentice's Signature Date

X _____
Signature of Sponsor's Signing Authority Date

Appendix C — Skill Set Completion for Sponsors

You will find the skill set numbers and titles in the Logbook's Table of Contents. By signing off each skill set in the table below, you are providing final confirmation, as the Apprentice's Sponsor, that the Apprentice has demonstrated competency in all the mandatory skills included in the skill set.

Skill Set #	Skill Set Title	Signing Authority Signature
U4600	Protect Self and Others	
U4601	Communicate	
U4602	Use Drawings and Schematics	
U4603	Use Hand and Power Tools	
U4604	Use Machine Tools	
U4605	Use Precision Measuring Equipment	
U4606	Use Materials and Fasteners	
U4607	Apply Lubricants	
U4608	Rig and Hoist	
U4609	Install and Maintain Material-Handling Systems	
U4610	Install and Maintain Power Transmission Systems	
U4611	Install and Maintain Compressors	
U4612	Install and Maintain Pumps	
U4613	Install, Commission, and Maintain Prime Movers and Machinery	
U4614	Weld, Braze, and Solder	
U4615	Install and Maintain Bearings, Seals, and Packing	
U4616	Install and Maintain Fans and Blowers	
U4617	Install and Maintain Fluid Power Systems	
U4618	Perform Preventive and Predictive Maintenance	

Ministry of Labour, Immigration, Training and Skills Development use only:

Sponsor verified as most recent sponsor of record: Yes () No ()

Documentation to support completion of hours attached: Yes () No ()

Completion of classroom training verified: Yes () No ()

Staff Name _____ Signature _____

Date _____

Appendix D — Local Service Delivery Offices in Ontario

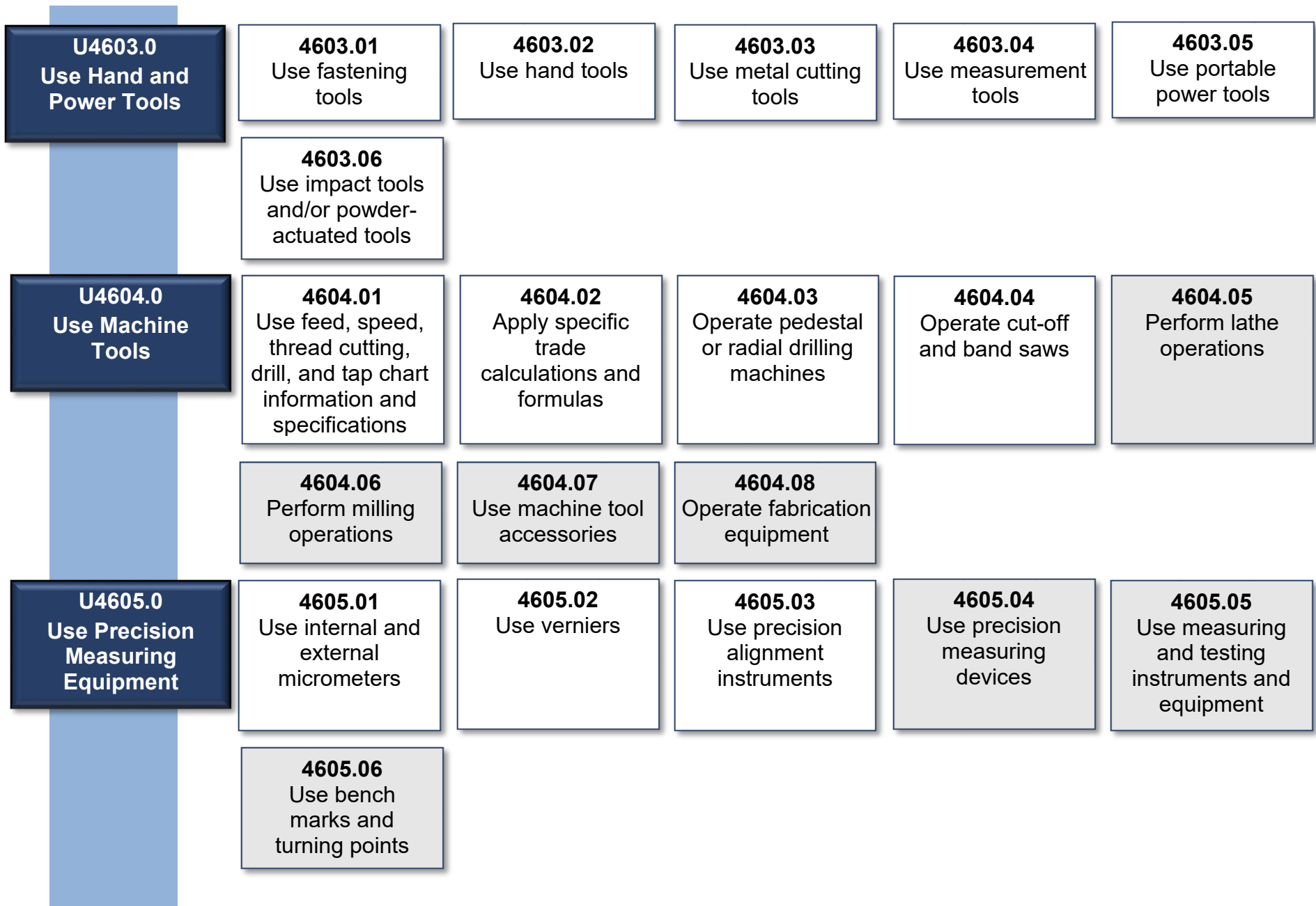
For current office listings visit: ontario.ca/page/employment-Ontario-apprenticeship-offices

Location	Contact	Location	Contact
Barrie 705-737-1431	55 Cedar Pointe Dr Unit 609, Barrie, ON L4N 5R7	Marathon 807-346-1550	52 Peninsula Road, Suite 103 Marathon, Ontario, P0T 2E0
Belleville 613-968-5558 1-800-953-6885	135 North Front St, Belleville, ON K8P 3B5	Markham 905-513-2695	140 Allstate Parkway, Suite 505, Markham, Ontario L3R 5Y8
Brantford 519-756-5197	505 Park Rd North Suite 201, Brantford, ON N3R 7K8	North Bay 705-495-8515 1-800-236-0744	200 First Ave West, North Bay, ON P1B 3B9
Chatham 519-354-2766 1-800-214-8284	870 Richmond St West 1st Floor, Chatham, ON N7M 5J5	Ottawa 613-731-7100 1-877-221-1220	Preston Square, 347 Preston Street, Suite 310, Ottawa, ON K1S 3H8
Cornwall 613-938-9702 1-877-668-6604	132 Second St East Ste 202, Cornwall, ON K6H 1Y4	Owen Sound 519-376-5790 1-800-838-9468	1450 1st Ave West, Suite 100, Owen Sound, ON N4K 6W2
Dryden 807-456-2665 1-800-734-9572	Provincial Government Building, 479 Government St, Dryden, ON P8N 3K9	Peel 905-279-7333 1-800-736-5520	The Emerald Centre, 10 Kingsbridge Garden Circle, Suite 404, Mississauga, ON L5R 3K6
Durham 905-433-0595 1-800-461-4608	78 Richmond Street West, Oshawa, ON L1G 1E1	Pembroke 613-735-3911 1-800-807-0227	615 Pembroke St East, Pembroke, ON K8A 3L7
Elliot Lake 1-800-236-8817	50 Hillside Dr North, Elliot Lake, ON P5A 1X4	Peterborough 705-745-1918 1-877-433-6555	901 Lansdowne St West, Peterborough, ON K9J 1Z5
Fort Frances 807-274-8634	922 Scott St 2nd Flr, Fort Frances, ON P9A 1J4	Sarnia 519-542-7705 1-800-363-8453	Bayside Mall, 150 Christina St North, Sarnia, ON N7T 7W5
Geraldton 807-854-1966	208 Beamish Avenue West Geraldton, Ontario P0T 1M0	Sault Ste. Marie 705-945-6815 1-800-236-8817	477 Queen St East 4th Flr, Sault Ste Marie, ON P6A 1Z5
Halton 905-842-5105 1-844-901-5105	700 Dorval Dr., Suite 201, Oakville, ON L6K 3V3	St Catharines 905-704-2991 1-800-263-4475	Garden City Tower, 301 St Paul St East, 10th Flr, St Catharines, ON L2R 7R4
Hamilton 905-521-7764 1-800-668-4479	Ellen Fairclough Bldg, 119 King St West 8th Flr, Hamilton, ON L8P 4Y7	Sudbury 705-564-3030 1-800-603-5999	159 Cedar St Ste 506, Sudbury, ON P3E 6A5
Kapuskasing 705-465-5785 705-235-1950	Ontario Government Complex, 122 Government Rd West, Kapuskasing, ON P5N 2X8	Thunder Bay 807-346-1550 1-800-439-5493	189 Red River Rd Suite 103, Thunder Bay, ON P7B 1A2
Kenora 807-468-2879 1-800-734-9572	227 1/2 Second St South, Kenora, ON P9N 1G4	Timmins 705-235-1950 1-877-275-5139	Ontario Government Complex, 5520 Highway 101 East Wing B, South Porcupine, ON P0N 1H0
Kingston 613-548-1151 1-866-973-4043	Alliance Business Centre, 299 Concession St Ste 201, Kingston, ON K7K 2B9	Toronto Centre 416-927-7366 1-800-387-5656	2 St Clair West, 11 th floor Toronto, ON M4A 1L5
Kitchener 519-653-5758 1-866-877-0099	4275 King St East, Kitchener, ON N2P 2E9	Toronto South 416-326-5800	625 Church St 1st Fl, Toronto, ON M7A 2B5
London 519-675-7788 1-800-265-1050	1200 Commissioners Rd E, Unit 72, London, ON N5Z 4R3	Windsor 519-973-1441	Roundhouse Centre, 3155 Howard Ave 2nd Fl, Suite 200, Windsor, ON N8X 4Y8

Competency Analysis Profile (CAP) Chart

U4600.0 Protect Self and Others	4600.01 Practise safe work habits	4600.02 Apply machinery and equipment lockout and de- energizing procedures	4600.03 Wear, adjust, and maintain personal protective equipment and clothing	4600.04 Comply with established confined space safety procedures	4600.05 Follow company procedures for applying first aid
	4600.06 Apply fire- prevention techniques	4600.07 Perform all work in compliance with company safety and housekeeping standards			
U4601.0 Communicate	4601.01 Communicate with fellow workers, company representatives, and other trades	4601.02 Write maintenance and job-specific technical reports			
U4602.0 Use Drawings and Schematics	4602.01 Use engineering, machine, and component drawings and symbols	4602.02 Draw or sketch assembly and component parts	4602.03 Use reports and technical and manufacturers' manuals	4602.04 Use schematics and diagrams	

Competency Analysis Profile: Industrial Mechanic Millwright 433A *(all unshaded skill sets must be completed)*



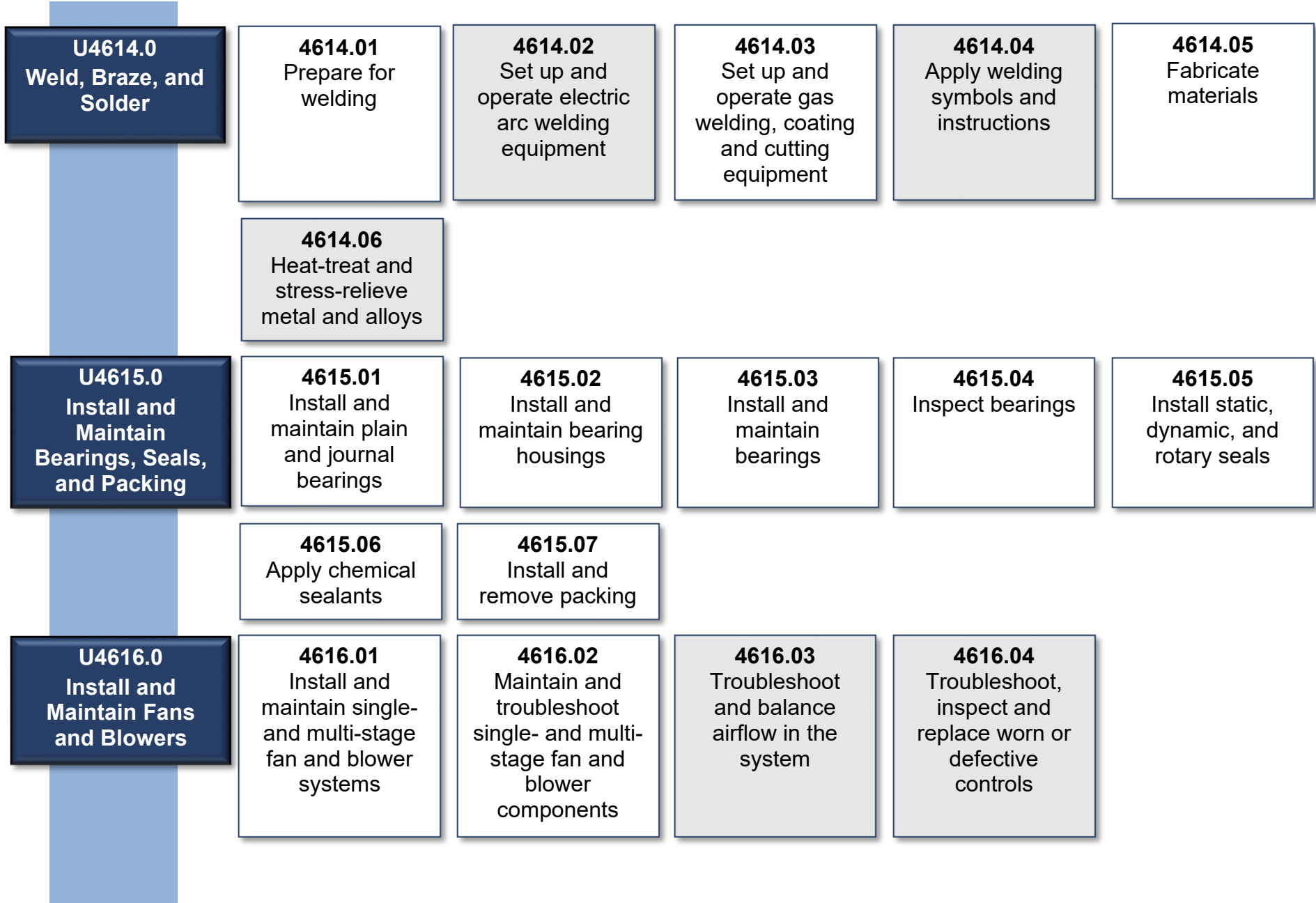
Competency Analysis Profile: Industrial Mechanic Millwright 433A *(all unshaded skill sets must be completed)*

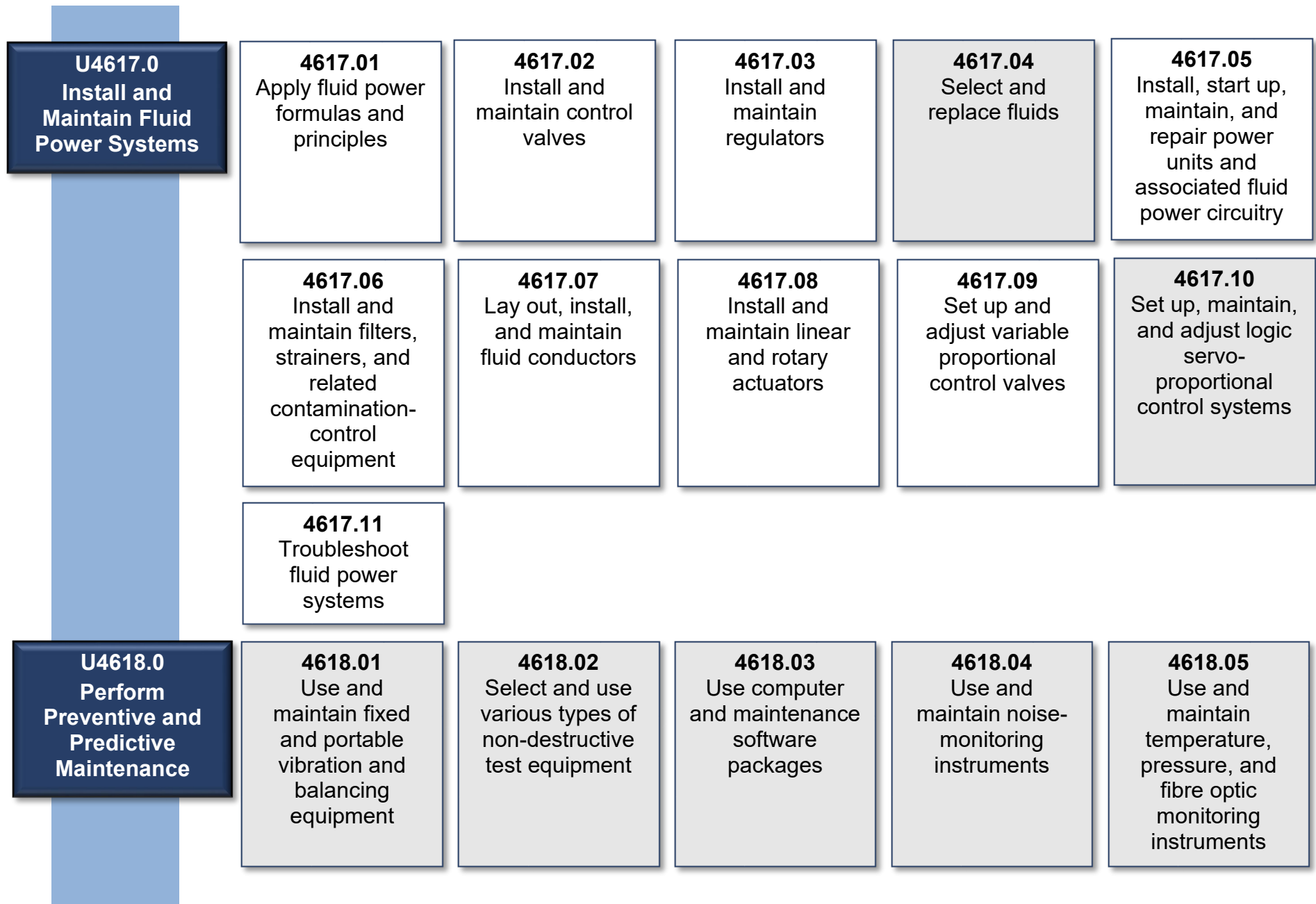
U4606.0 Use Materials and Fasteners	4606.01 Use ferrous, non-ferrous, and specialty alloy materials	4606.02 Use non-metallic materials	4606.03 Apply the screw thread system	4606.04 Install fastening devices	
U4607.0 Apply Lubricants	4607.01 Identify the characteristics and composition of lubricants	4607.02 Apply oils and greases	4607.03 Apply special-purpose lubricants	4607.04 Install, maintain, and repair machinery and plant lubrication systems	4607.05 Handle and store all lubricants and greases
U4608.0 Rig and Hoist	4608.01 Plan lifts	4608.02 Use rigging and hoisting equipment	4608.03 Inspect rigging and hoisting equipment	4608.04 Use standard hand signals and/or radio signal procedures	4608.05 Use manual or power hoisting equipment
U4609.0 Install and Maintain Material-Handling Systems	4609.01 Install, align, and maintain conveyor systems	4609.02 Install and maintain conveyor components	4609.03 Splice conveyor belts	4609.04 Inspect tracking at idlers and pulleys	4609.05 Inspect and maintain overhead cranes and hoists and monorail systems
	4609.06 Install and maintain material-handling valves	4609.07 Install and maintain material-handling piping and duct work			

Competency Analysis Profile: Industrial Mechanic Millwright 433A *(all unshaded skill sets must be completed)*

U4610.0 Install and Maintain Power Transmission Systems	4610.01 Calculate gear ratios, horsepower requirements, and final speeds	4610.02 Install, align, and maintain power transmission belts	4610.03 Install, align and maintain power transmission components	4610.04 Install, align, and maintain couplings	4610.05 Install and maintain keys, splines, bushes, and tapered bushings
	4611.01 Install and maintain rotary and reciprocating compressors	4611.02 Install and maintain primary filters and coolers	4611.03 Install and maintain separators and receivers	4611.04 Install, maintain, and repair unloading, distribution, and lube systems	4611.05 Install, maintain, and inspect dryers and coolers
	4612.01 Install and maintain hydrodynamic pumps	4612.02 Install, maintain, and replace hydrodynamic pump components	4612.03 Install, maintain, and repair hydrostatic pumps	4612.04 Inspect, maintain, and replace hydrostatic pump components	
	4613.01 Lay out and prepare base or foundation	4613.02 Install prime movers	4613.03 Level and align machinery	4613.04 Secure machinery	4613.05 Conduct final checks on prime movers and machinery
	4613.06 Start up and run-in prime mover and ancillary equipment	4613.07 Record footprint/signature of machinery	4613.08 Maintain and repair prime movers		

Competency Analysis Profile: Industrial Mechanic Millwright 433A *(all unshaded skill sets must be completed)*





Notes

[illegible]

Completing Your Apprenticeship Program

Once your sponsor agrees you are competent in the required skills, your hours are complete and you have completed all the levels of classroom training required for your trade:

- ✓ Follow the completion instructions on the Completion Form (Appendix A) in the Logbook.
- ✓ Answer any questions that MLITSD staff may have and provide any additional completion documentation that may be required.
- ✓ Once completion is confirmed, MLITSD will issue you a Certificate of Apprenticeship and notify Skilled Trades Ontario.

After Your Apprenticeship

If you are in a trade with a certification exam, Skilled Trades Ontario will receive notice of your completion.

For compulsory trades, you will be issued a Provisional Certificate of Qualification which will allow you to work legally for up to 12 months until you write and pass your examination.

For a non-compulsory trade, once you pass your examination, you will be issued a Certificate of Qualification for your trade.

Preparing For Your Exam

- **To pay for a Certificate of Qualification examination, contact Skilled Trades Ontario** Client Services Department at: 647-847-3000 or toll free at 1-855-299-0028
- **To schedule your exam:** Once you have paid, contact your local Service Delivery Office to book your exam.
- **Download Skilled Trades Ontario exam preparation guide at:** [Exam Resources – Skilled Trades Ontario](#) and/or view the exam preparation guide for Red Seal trades at: red-seal.ca



[SkilledTradesOntario.ca](https://www.SkilledTradesOntario.ca)



Industrial Mechanic (Millwright)