



**Skilled  
Trades**  
Ontario

**Métiers  
spécialisés**  
Ontario

Apprenticeship  
Training Standard  
Logbook

**Truck and Coach  
Technician**

310T

2016

# 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

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**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](http://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](http://Skilled Trades Ontario.ca).

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*Maintained with transfer to Skilled Trades Ontario 2016 (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 journeyman/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	<a href="http://red-seal.ca">red-seal.ca</a>
Apprenticeship in Ontario	<a href="http://ontario.ca/page/apprenticeship-ontario">ontario.ca/page/apprenticeship-ontario</a>
Employment Ontario	<a href="http://employmentontario.ca">employmentontario.ca</a>
Service Canada	<a href="http://servicecanada.gc.ca">servicecanada.gc.ca</a>
<i>Building Opportunities in the Skilled Trades Act, 2021</i>	<a href="http://ontario.ca">Building Opportunities in the Skilled Trades Act, 2021, S.O. 2021, c. 28 - Bill 288 (ontario.ca)</a>
Ministry of Labour, Immigration, Training and Skills Development	<a href="http://ontario.ca">Ministry of Labour, Immigration, Training and Skills Development   ontario.ca</a>
Exam Preparation Guide	<a href="http://ontario.ca">Exam Resources – Skilled Trades Ontario</a>
Skills Zone (Ontario Skills Passport)	<a href="http://www.skillszone.ca/">http://www.skillszone.ca/</a>

*\*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 Truck and Coach Technician 310T 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](http://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/](https://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 Truck and Coach Technician is set out in section 141 of Ontario Regulation 875/21 under BOSTA and reads as follows:

**141.** The scope of practice for the trade of truck and coach technician includes engaging in any of servicing, repairing, overhauling, diagnosing and inspecting motor coaches, heavy trucks and truck-trailers by doing any of the following:

1. Disassembling, adjusting, repairing and reassembling engines, transmissions, clutches, rear ends, differentials, brakes, drive shafts, wheels and rims, axles and other assemblies.
2. Testing for, diagnosing and correcting faulty alignment of wheels and steering mechanisms.
3. Diagnosing faults in, repairing or replacing suspension systems, including shock absorbers and spring assemblies.
4. Diagnosing faults in, installing, repairing and removing ignition, charging and starting systems, panel instruments, wiring and other electrical and electronic systems and equipment.
5. Diagnosing faults in, repairing and adjusting fuel systems, engine management systems and emission control systems.
6. Diagnosing faults in, installing, inspecting, maintaining and removing air-conditioning and refrigeration and heating systems.

\*While the Logbook draws on the scope of practice regulation (Section 141 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 6000 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**

6720 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 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 Truck and Coach Technician 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





**U5135.0 Occupational Health and Safety Procedures**

**General Performance Objective**

Comply with occupational health and safety procedures, by: identifying potential health and safety hazards; maintaining a safe and secure work environment; handling and storing hazardous materials; wearing and maintaining personal protective equipment; complying with workplace-related legislation; interpreting and applying service-related information; practising good housekeeping; complying with Workplace Hazardous Materials Information (WHMIS) guidelines; according to the *Occupational Health and Safety Act*, government regulations, GHS manufacturer's recommendations and company policy.

**Skills**

**5135.01 Identify potential workplace health and safety hazards**, including: excessive exhaust and/or explosive fumes, dust, sound levels, electrical and mechanical hazards (i.e. damaged or faulty air lines and/or inadequate ventilation); so that the potential for personal injury, damage to equipment, vehicles and the environment are minimized; according to government regulations and company policy.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5135.02 Handle, store and dispose of hazardous workplace materials**, including: cleaning solvents, anti-freeze, transmission and brake fluids, engine oil, brake dust, battery electrolyte, refrigerants and gases, using personal protective equipment and specified handling and storage equipment; so that individuals are protected from injury, the environment from contamination and safety procedures are followed; according to government regulations and company policy.

## Truck and Coach Technician

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

**5135.03**     **Wear and maintain personal protective equipment**, including: eye, ear, hand, respiratory, body and foot protection, ensuring that correct fit and optimum protection is provided to the wearer for the specific task performed; according to government regulations, manufacturer’s specifications and company policy.

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

**5135.04**     **Comply with workplace-related legislation**, relating to highway traffic, safety, parts warranties, occupational health/safety, environmental protection, and business and trade practices, including: Occupational Health and Safety Act, Motor Vehicle Repair Act, Highway Traffic Act, National Safety Code (NSC), Section 11B, National Safety Mark (NSM) Environmental Protection Act; by: identifying the personal and legal liabilities of technicians and vehicle owners when performing vehicle safety inspections, emissions tests, providing repair estimates, and repairing/replacing defective parts; according to government regulations and company policy.

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

**5135.05 Interpret and apply service-related information**, including: service bulletins, manuals and parts catalogues, by: locating and identifying the vehicle information number (VIN), service information systems; so that service/repair is performed according to manufacturer’s recommendations and company policy.

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

**5135.06 Practice good housekeeping in the workplace**, by applying fire hazard prevention methods, including: maintaining a clean and orderly work area; identifying, removing and disposing of potential fire hazards; cleaning up grease, oil spills and/or fluids; ensuring that the work area is free of obstructions, and safely storing tools and shop equipment and wearing personal protective equipment, to minimize accident or injury to self and others; according to government regulations and company policy.

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

**5135.07 Comply with Workplace Hazardous Materials Information Systems (WHMIS) guidelines**, including: reading and interpreting labels and Materials Data Sheets (MSDS), Global Harmonization System (GHS), ensuring receipt of training in WHMIS regulations and practices; according to the Occupational Health and Safety Act.

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

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**U5136.0 Electrical Systems - Starting and Charging**

**General Performance Objective**

Diagnose and repair electrical systems - starting and charging, by: performing a visual inspection; diagnosing and troubleshooting batteries; servicing and boosting/charging batteries; diagnosing and troubleshooting starting systems and components; repairing starting systems and components; verifying and documenting repair of starting systems and components; diagnosing and troubleshooting charging systems and components; repairing charging systems and components, and verifying and documenting repair of charging systems and components; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5136.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, damaged, corroded, distorted, loose, missing, or defective components, including: batteries, starters, alternating current (a/c) generators (alternators), drive mechanisms, cables, connectors, switches, relays, regulators, solenoids, sensors, modules, wiring harnesses, gauges, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5136.02 Diagnose and troubleshoot starting systems and components**, including: starting motors, batteries, cables, hardware, wiring harnesses, solenoids, relays, switches, circuit protection devices, and fastening and mounting devices; by: visually inspecting, testing and analyzing performance and function, checking for: opens/shorts/grounds, voltage, amperage, resistance, wear, noise, odour, colour, corrosion, temperature, fractures, and distortion; using: hand, power, specialized, precision, heavy-duty load testers and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5136.03**     **Repair starting systems and components**, including: starting motors, batteries, cables, hardware, wiring harnesses, solenoids, relays, switches, circuit protection devices, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5136.04**     **Verify and document repair of starting systems and components**, including: starting motors, batteries, cables, hardware, wiring harnesses, solenoids, relays, switches, circuit protection devices, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5136.05 Diagnose and troubleshoot charging systems and components,** including: alternating and direct current generators, batteries, cables, connectors, switches, relays, voltage regulators, circuit protection devices, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: opens/grounds/shorts, voltage, amperage, resistance, vibration/noise, odour, corrosion temperature, and alignment; using: hand, power, specialized, precision, AVR (ammeter, voltmeter, resistance) testers, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5136.06 Repair charging systems and components,** including: alternating and direct current generators, batteries, cables, connectors, switches, relays, voltage regulators, circuit protection devices, wiring harnesses, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5136.07**     **Verify and document repair of charging systems and components**, including: batteries, cables, hardware, wiring harnesses, voltage regulators, relays, alternating current (AC) generators, switches, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

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**U5137.0     Electrical Systems – Body Electrical and Components**

**General Performance Objective**

Diagnose and repair electrical system - body electrical and components, by: performing a visual inspection; diagnosing and troubleshooting body electrical systems and components; repairing body electrical systems and components; verifying and documenting repair of body electrical systems and components; repairing system warning devices; verifying repair of system warning devices; diagnosing and troubleshooting fire suppression systems and components (if equipped); repairing fire suppression systems and components (if equipped); verifying and documenting repair of fire suppression system and components (if equipped); repairing coach destination signs; verifying repair of coach destination signs; diagnosing and troubleshooting supplemental restraint systems (SRS); repairing supplemental restraint systems (SRS); and verifying and documenting repair of supplemental restraint systems (SRS); according to manufacturer's recommendations, specifications, and safety requirements.

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**Skills**

**5137.01**     **Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective components, including: batteries, cables, connectors, switches, relays, solenoids, sensors, modules, wiring harnesses, lighting/illumination, terminal boards/blocks, warning devices, circuit protection devices, electrical accessory devices, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5137.02 Diagnose and troubleshoot body electrical systems and components,** including: batteries, motors, cables, connectors, switches, relays, solenoids, sensors, modules wiring harnesses, lighting/illumination, terminal boards/blocks, proximity warning, circuit protection, electrical accessory, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: opens/shorts/grounds, odour, colour, temperature, corrosion, and noise/vibration; using: hand, power, specialized, precision, soldering, heat shrink tubes, crimpers, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5137.03 Repair body electrical systems and components,** including: including: batteries, motors, cables, connectors, switches, relays, solenoids, sensors, modules wiring harnesses, lighting/illumination, terminal boards/blocks, proximity warning, circuit protection, electrical accessory, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, soldering equipment, heat shrink tubes, crimpers, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.



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

**5137.04 Verify and document repair of body electrical systems and components**, including: batteries, motors, cables, connectors, switches, relays, solenoids, sensors, modules, wiring harnesses, lighting/illumination, terminal boards/blocks, proximity warning, circuit protection, electrical accessory, and fastening and mounting devices; by visually inspecting, testing, and analysing performance and function, using: hand, power, specialized, precision, soldering equipment, heat shrink tubes, crimpers, and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.05 Repair system warning devices**, including: cables, connectors, switches, relays, solenoids, sensors, modules, wiring harnesses, annunciators/data display screens, and fastening and mounting devices, by: exchanging, or servicing; using: hand, power, specialized, precision and electronic service tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.06**     **Verify and document repair of system warning devices**, including: cables, connectors, switches, relays, solenoids, sensors, modules, wiring harnesses, annunciators/data display screens, and fastening and mounting devices, using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.07**     **Diagnose and troubleshoot fire suppression systems and components**, including: sensors, activating devices, wiring harnesses, and fastening and mounting devices; by visually inspecting, testing, and analyzing performance and function; checking for: opens/shorts/grounds, corrosion, distortion, temperature and leaks; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5137.08**     **Repair fire suppression systems and components**, including: sensors, activating devices, wiring harnesses, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.09 Verify and document repair of fire suppression systems and components**, including: sensors, activating devices, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.10 Repair coach destination signs**, including: rollers, gears, chains, motors, and display boards; by: exchanging, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.11 Verify and document repair of coach destination signs**, including: rollers, gears, chains, motors, and display boards; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.12 Diagnose and troubleshoot supplemental restraint systems (SRS) and components**, including: air bag assemblies, sensors, modules, activating devices, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; checking for: opens/shorts/grounds, corrosion, wear, and distortion; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5137.13 Repair supplemental restraint systems (SRS) and components**, including: air bag assemblies, sensors, modules, activating devices, and wiring harnesses, and fastening and mounting devices; by exchanging; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5137.14 Verify and document repair of supplemental restraint systems (SRS) and components**, including: air bag assemblies, sensors, modules, activating devices, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

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**U5138.0 Fuel Systems**

**General Performance Objective**

Diagnose and repair fuel systems by: performing a visual inspection; diagnosing and troubleshooting fuel systems and components; repairing fuel systems and components; verifying and documenting repair of fuel systems and components; according to manufacturer’s recommendations, specifications, and safety requirements.

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**Skills**

**5138.01 Perform visual inspection**, identifying system types and applications, by: checking for: fuel condition, worn, loose, damaged, leaking, missing, or defective components, including: pumps, injectors, lines, hoses, fittings, filters, vents, tanks, valves, heat exchangers, crossover pipes, heaters, sensors, modules, wiring harnesses, mechanical controls, and fastening and mounting devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5138.02 Diagnose and troubleshoot fuel systems and components**, including: fuel, tanks, vents, hoses, lines, filters, heaters, valves, pumps, linkages, cables, throttles, injectors, switches, relays, solenoids, sensors, modules, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, analyzing performance, function and programming, checking for: opens/shorts/grounds, wear, odour, temperature, smoke colour, corrosion, distortion, fractures, noise/vibration, and fuel level, type and condition; using: hand, power, specialized, precision and electronic service tools, vacuum and pressure gauges, lifting, rigging and blocking devices, refractometers, hydrometers and water-detection devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5138.03 Repair fuel systems and components**, including: fuel, tanks, vents, hoses, lines, filters, heaters, valves, pumps, linkages, cables, throttles, injectors, switches, relays, solenoids, sensors, modules, wiring harnesses, and fastening and mounting devices; by: exchanging, reconditioning, servicing, or reprogramming; using: hand, power, specialized, precision and electronic service tools, vacuum and pressure gauges, lifting, rigging and blocking devices, ultrasonic baths, and torque wrenches; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5138.04**     **Verify and document repair of fuel systems and components**, including: fuel, tanks, vents, hoses, lines, filters, heaters, valves, pumps, linkages, cables, throttles, injectors, switches, relays, solenoids, sensors, modules, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, analysing performance, function and programming; using: hand, power, specialized, precision and electronic service tools, vacuum and pressure gauges, lifting, rigging and blocking devices, ultrasonic baths, and torque wrenches; according to manufacturer's recommendations, specifications, and safety requirements.

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

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**U5139.0     Engine Systems – Gasoline and Diesel**

**General Performance Objective**

Diagnose and repair engines, by: performing a visual inspection; diagnosing and troubleshooting cooling systems and components, repairing cooling systems and components; verifying and documenting repair of cooling systems and components; diagnosing and troubleshooting engine lubricating systems and components; repairing engine lubricating systems and components; verifying and documenting repair of engine lubricating systems and components; diagnosing and troubleshooting cylinder heads and components; repairing cylinder heads and components; verifying and documenting repair of cylinder heads and components; diagnosing and troubleshooting engine blocks and components; repairing engine blocks and components; verifying and documenting repair of engine blocks and components; diagnosing and troubleshooting auxiliary coolers and components, repairing auxiliary coolers and components, and verifying and documenting repair of auxiliary coolers and components; according to manufacturer`s recommendations, specifications, and safety requirements.

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**Skills**

**5139.01**     **Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective components, including: cooling and lubrication systems, cylinder heads, engine blocks, auxiliary coolers, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5139.02 Diagnose and troubleshoot cooling systems and components,** including: coolant, radiators, reservoirs, surge tanks, fans, hubs and controls, water pumps, shutters, controls, actuators, belts, hoses, lines, fittings, heat exchangers, filters, gaskets, O-rings, seals, valves, switches, relays, sensors, modules, wiring harnesses, thermostats, block heaters, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: opens/shorts/grounds, wear, odour, colour, temperature, corrosion, distortion, fractures, contamination, leaks, noise/ vibration, and coolant type and level; using: hand, power, specialized, precision and electronic service tools, lifting, rigging and blocking devices, pullers, torque wrenches, gauges, pressure/radiator cap testers, hydrometers, refractometers, and coolant analysis kits; according to manufacturer's recommendations, specifications, and safety requirements.

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



**5139.03 Repair cooling systems and components**, including: coolant, radiators, reservoirs, surge tanks, fans, hubs and controls, water pumps, shutters, controls, actuators, belts, hoses, lines, fittings, heat exchangers, filters, gaskets, O-rings, seals, valves, switches, relays, sensors, modules, wiring harnesses, thermostats, block heaters, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, lifting, rigging and blocking devices, pullers, torque wrenches, and gauges, pressure/radiator cap testers, hydrometers, refractometers, and coolant analysis kits; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5139.04 Verify and document repair of cooling systems and components**, including: coolant, radiators, reservoirs, surge tanks, fans, hubs and controls, water pumps, shutters, controls, actuators, belts, hoses, lines, fittings, heat exchangers, filters, gaskets, O- rings, seals, valves, switches, relays, sensors, modules, wiring harnesses, thermostats, block heaters, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, lifting, rigging and blocking devices, pullers, torque wrenches, and gauges, pressure/radiator cap testers, hydrometers, refractometers, and coolant analysis kits; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5139.05 Diagnose and troubleshoot engine lubricating systems and components**, including: oil, pumps, filters, housings, lines, hoses, fittings, seals, piston cooling jets, gaskets, O-rings, heat exchangers, bypass valves and auxiliary devices, compressors, , engine brakes, fuel system actuators, sensors, and wiring harnesses; by testing, and analysing performance and function, checking for: opens/shorts/grounds, wear, odour, temperature, corrosion, distortion, fractures, colour, noise, pressure, oil analysis and spectrographic testing of components; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.06 Repair engine lubricating systems and components**, including: oil, pumps, filters, housings, lines, hoses, fittings, seals, piston cooling jets, gaskets, O-rings, heat exchangers, bypass valves and auxiliary devices, compressors, , engine brakes, fuel system actuators, sensors, and wiring harnesses; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.07**     **Verify and document repair of engine lubricating systems and components**, including: oil, pumps, filters, housings, lines, hoses, fittings, seals, piston cooling jets, gaskets, O-rings, heat exchangers, bypass valves and auxiliary devices, compressors, engine brakes, fuel system actuators, sensors, modules, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices, according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.08**     **Diagnose and troubleshoot cylinder heads and components**, including: cylinder heads, expansion plugs, seats, guides, seals, springs, retainers, rotators, injectors tubes, valves and actuating mechanisms, camshafts, drive mechanisms, engine brakes, gasket assemblies, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: wear, temperature, corrosion, erosion, vibration/noise, carbon build-up, leaks, fractures, and distortion; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.09 Repair cylinder heads and components**, including: cylinder heads, expansion plugs, seats, guides, seals, springs, retainers, rotators, injectors tubes, valves and actuating mechanisms, camshafts, drive mechanisms, engine brakes, gasket assemblies, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.10 Verify and document repair of cylinder heads and components**, including: cylinder heads, expansion plugs, seats, guides, seals, springs, retainers, rotators, injectors tubes, valves and actuating mechanisms, camshafts, drive mechanisms, engine brakes, gasket assemblies, fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.11 Diagnose and troubleshoot engine blocks and components**, including: engine blocks, piston assemblies, connecting rods, bearings, liners, counter balancers, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: wear, temperature, corrosion, noise, carbon build-up, fractures, leaks, and distortion; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.12 Repair engine blocks and components**, including: piston assemblies, connecting rods, bearings, liners, counter balancers, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.13 Verify and document repair of engine blocks and components**, including: piston assemblies, connecting rods, bearings, liners, counter balancers, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5139.14 Diagnose and troubleshoot auxiliary coolers and components**, including: housings, charge air, oil coolers, fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function, checking for: temperature, contamination, corrosion, fractures, noise, cracks, leaks, and flow-test results; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature

**5139.15 Repair auxiliary coolers and components**, including: housings, charge air, oil coolers, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature

**5139.16**     **Verify and document repair of auxiliary coolers and components**, including: charge air, and oil coolers; by: testing performance and function; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature

**U5140.0     Engine Management Systems**

**General Performance Objective**

Diagnose and repair engine management systems, by: performing a visual inspection; diagnosing and troubleshooting fuel control systems and components; repairing fuel control systems and components; verifying repair of fuel control systems and components; diagnosing and troubleshooting electronic ignition systems and components; repairing electronic ignition systems and components; verifying and documenting repair of electronic ignition systems and components; diagnosing and troubleshooting electronically-controlled engine systems and components; repairing electronically-controlled engine systems and components; verifying and documenting repair of electronically-controlled engine systems and components; performing engine tune-ups; according to manufacturer’s recommendations, specifications, and safety requirements.

**Skills**

**5140.01**     **Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective engine components, including: engine protection systems, electronic ignition systems, switches, relays, solenoids, sensors, electronic control modules (ECM), wiring harnesses, driver displays, and fastening and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5140.02 Diagnose and troubleshoot fuel control systems and components,** including: pumps, injectors, actuators, warning devices, switches, solenoids, relays, sensors, modules, wiring harnesses, interfaces, multiplexing, and fastening and mounting devices; by: visually inspecting, testing, analyzing performance, and function, checking for: opens/shorts/grounds, diagnostic codes, wear, odour, temperature, corrosion, colour, noise, pressure, and leaks; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, schematic diagrams, and safety requirements.

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

**5140.03 Repair fuel control systems and components,** including: pumps, injectors, actuators, warning devices, switches, solenoids, relays, sensors, modules, wiring harnesses, interfaces, multiplexing, and fastening and mounting devices; by: exchanging, reconditioning, servicing, or programming; using, hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature



**5140.04**     **Verify and document repair of fuel control systems and components**, including: pumps, injectors, actuators, warning devices, switches, solenoids, relays, sensors, modules, wiring harnesses, interfaces, multiplexing, and fastening and mounting devices; by visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5140.05**     **Diagnose and troubleshoot electronic ignition systems and components**, including: distributor components, coils, resistors, switches, solenoids, relays, sensors, wiring harnesses, electronic ignition modules, spark plugs, high tension wires, engine lights, warning devices, electronic injectors, pumps, actuator modules, interfaces, multiplexing, and fastening and mounting devices; by: visually inspecting, testing, and analyzing performance, function and programming, checking for: opens/shorts/grounds, odour, temperature, corrosion, noise, flash codes, spark timing, system voltage and circuit resistance; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, schematic diagrams, and safety requirements.

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**5140.06 Repair electronic ignition systems and components**, including: distributor components, coils, resistors, switches, solenoids, relays, sensors, wiring harnesses, electronic ignition modules, spark plugs, high tension wires, engine lights, warning devices, electronic injectors, pumps, actuator modules, interfaces, multiplexing, and fastening and mounting devices; by: exchanging, reconditioning, reprogramming, or servicing; using, hand, power, specialized, precision and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements,

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**5140.07 Verify and document repair of electronic ignition systems and components**, including: distributor components, coils, resistors, switches, solenoids, relays, sensors, wiring harnesses, electronic ignition modules, spark plugs, high tension wires, engine lights, warning devices, electronic injectors, pumps, actuator modules, interfaces, multiplexing, and fastening and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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**5140.08 Diagnose and troubleshoot electronically-controlled engine systems and components**, including: circuit protection devices, connectors, sensors, modules, drivers, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, analysing performance function and programming; checking for: opens/shorts/grounds, wear, odour, temperature, corrosion, vibration/noise, diagnostic codes, system voltage, and Society of Automotive Engineers (SAE) code identifiers; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer’s recommendations, specifications, schematic diagrams, and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature

**5140.09 Repair electronically-controlled engine systems and components**, including: circuit protection devices, connectors, sensors, modules, drivers, wiring harnesses, and fastening and mounting devices; by: exchanging, reconditioning, reprogramming, or servicing; using: hand, power, specialized, precision and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5140.10 Verify and document repair of electronically-controlled engine systems and components**, including: circuit protection devices, connectors, sensors, modules, drivers, wiring harnesses, fastening and mounting devices; by: visually inspecting, testing, analysing performance, function and programming; using, hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices, according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5140.11 Perform engine tune-ups**, by: measuring fuel, compression, and crankcase pressures, checking/replacing disposable service items such as filters, ignition components (if equipped), checking electrical systems, and performing all recommended engine adjustments; checking intake and exhaust systems, analysing engine operating parameters and vehicle data logs; using: gauges, hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

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

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**U5141.0 Exhaust, Intake, and Emission Control Systems**

**General Performance Objective**

Diagnose and repair exhaust, intake, and emission control systems and components, by: performing a visual inspection; diagnosing and troubleshooting exhaust, intake and emission control systems and components; repairing exhaust, intake and emission control systems and components; verifying and documenting the repair of exhaust, intake and emission control systems and components; diagnosing and troubleshooting turbocharger systems and components, repairing turbocharger systems and components, and verifying and documenting the repair of turbocharger systems and components; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5141.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective components, including: manifolds, piping, gaskets, seals, turbochargers, blowers, charge air coolers, particulate traps, catalytic converters, mufflers, heat shields, filters and indicators, pyrometers, emission control devices, exhaust brakes (if equipped), sensors, modules, wiring harnesses, actuators, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5141.02 Diagnose and troubleshoot exhaust, intake, and emission control systems and components**, including: manifolds, piping, gaskets, seals, turbochargers, blowers, charge air coolers, particulate traps, catalytic converters, mufflers, heat shields, filters, indicators, pyrometers, emission control devices, exhaust brakes (if equipped), sensors, modules, wiring harnesses, actuators, fastening and mounting devices; by visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, odour, noise/vibration, pressures, smoke colour, temperature, and leaks; using: hand, power, specialized, precision, and electronic service tools, pyrometers, gauges, exhaust gas analysers, opacimeters (smoke meters), manometers, vacuum gauges, stethoscopes, and infrared thermometers; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5141.03 Repair exhaust, intake, and emission control systems and components**, including: manifolds, piping, gaskets, seals, turbochargers, blowers, charge air coolers, particulate traps, catalytic converters, mufflers, heat shields, filters, indicators, pyrometers, emission control devices, exhaust brakes, sensors, modules, wiring harnesses, actuators, fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, and electronic service tools, heating, welding and cutting equipment, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5141.04 Verify and document repair of exhaust, intake, and emission control systems and components**, including: manifolds, piping, gaskets, seals, turbochargers, blowers, charge air coolers, particulate traps, catalytic converters, mufflers, heat shields, filters, indicators, pyrometers, emission control devices, exhaust brakes, sensors, modules, wiring harnesses, actuators, fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, welding/heating equipment, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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**5141.05 Diagnose and troubleshoot turbocharger systems and components**, including: housings, waste gates, variable volume controls, manifold boost control devices, turbochargers, boost pressure sensors, piping, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: pressure, temperature, corrosion, wear, leaks, and noise/vibration, using: hand, power, specialized, precision, and electronic service tools, welding/heating equipment, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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**5141.06 Repair/replace turbocharger systems and components**, including: housings, waste gates, variable volume controls, manifold boost control devices, turbochargers, boost pressure sensors, piping, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using hand, power, specialized, precision, and electronic service tools, dynamic balancing equipment, gauges, stethoscopes, and precision measuring instruments; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5141.07 Verify and document repair of turbocharger systems and components**, including: including: waste gates, variable volume controls, manifold boost control devices, turbochargers, boost pressure sensors, piping, and fastening and mounting devices, by: testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, dynamic balancing equipment, gauges, stethoscopes, and precision measuring instruments; according to manufacturer's recommendations, specifications, and safety requirements.

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**U5142.0 Transmission Systems**

**General Performance Objective**

Diagnose and repair transmission systems, by: performing a visual inspection; diagnosing and troubleshooting clutch systems and components; repairing clutch systems and components; verifying the repair of clutch systems and components; diagnosing and troubleshooting manual transmissions and components; repairing manual transmissions and components; verifying the repair of manual transmissions and components; diagnosing and troubleshooting automatic transmissions and components; repairing automatic transmissions and components; verifying and documenting the repair of automatic transmissions and components; diagnosing and troubleshooting electronically-controlled systems and components, repairing electronically-controlled systems and components, verifying repair of electronically-controlled systems and components; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5142.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, defective, leaking, or missing components, including: housings, clutch and pressure plates, friction materials, clutch brakes, flywheels, ring gears, linkages, cables, controls, actuators, cylinders, reservoirs, lines, fittings, shafts, bearings, seals, bushings, gear sets, sensors, modules, wiring harnesses, fluids/lubricants, coolers, pumps and filters, auxiliary devices, dipsticks, tubes, yokes, flanges, driver display screens, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5142.02 Diagnose and troubleshoot clutch systems and components**, including: pressure plates, cover assemblies, discs, intermediate plates and drive mechanisms, clutch brakes, linkages, cables, controls, actuators, input (pilot) shafts, cross shafts, release bearings, pilot bearings, flywheel assemblies, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: odour, temperature, corrosion, fractures, contamination, vibration/noise, colour, free play, internal adjustment, clutch brake squeeze, slippage, disengagement, dragging, and alignment; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5142.03 Repair/replace clutch systems and components**, including: pressure plates, cover assemblies, discs, intermediate plates and drive mechanisms, clutch brakes, linkages, cables, controls, actuators, input (pilot) shafts, cross shafts, release bearings, pilot bearings, flywheel assemblies, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using hand, power, specialized, precision, and electronic service tools, heating, welding and cutting equipment, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5142.04**     **Verify and document repair of clutch systems and components,** including: pressure plates, cover assemblies, discs, intermediate plates and drive mechanisms, clutch brakes, linkages, cables, controls, actuators, input (pilot) shafts, cross shafts, release bearings, pilot bearings, flywheel assemblies, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5142.05**     **Diagnose and troubleshoot manual transmissions and components,** including: transfer cases, housings, linkages, gears, shafts, synchronizers, bearings, thrust washers, seals, fluids, filters, power take-off (PTO) units, speedometer drives, auxiliary drives, input, main, and counter shafts, shift collars, gear shift levers, cover assemblies, auxiliary sections, pneumatic controls, yokes, flanges, switches, solenoids, sensors, modules, wiring harness, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, odour, temperature, corrosion, colour, noise, vibration, wear, gear clash, oil level and condition, leaks, contamination, timing, and alignment, using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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**5142.06 Repair manual transmissions and components**, including: transfer cases, housings, linkages, gears, shafts, synchronizers, bearings, thrust washers, seals, fluids, filters, power take-off (PTO) units, speedometer drives, auxiliary drives, input, main, and counter shafts, shift collars, gear shift levers, cover assemblies, auxiliary sections, pneumatic controls, yokes, flanges, switches, solenoids, sensors, modules, wiring harness, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, and electronic service tools, heating, welding, and cutting equipment, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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**5142.07 Verify and document repair of manual transmissions and components**, including: transfer cases, housings, linkages, gears, shafts, synchronizers, bearings, thrust washers, seals, fluids, filters, power take-off (PTO) units, speedometer drives, auxiliary drives, input, main, and counter shafts, shift collars, gear shift levers, cover assemblies, auxiliary sections, pneumatic controls, yokes, flanges, switches, solenoids, sensors, modules, wiring harness, and fastening and mounting devices; by visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5142.08 Diagnose and troubleshoot automatic/automated transmission systems and components**, including: fluids, transfer cases, housings, gear train, shafts, bearings, seals, springs, clutch packs, one-way clutches, band and servo assemblies, pumps, valve bodies, governors, modulators, power take-off (PTO) units, torque converters, flex plates, modulator/throttle devices, governor assemblies, retarding devices, hoses, lines, fittings, linkages, cables, switches, relays, solenoids sensors, modules, wiring harnesses, interface, driver display screens, diagnostic lights, and fastening and mounting devices, by: visually inspecting, testing, and analyzing performance and function, checking for: opens/shorts/grounds, odour, temperature, leaks, colour, vibration/noise, corrosion malfunctioning indicator lights; using: hand, power, specialized, precision, and electronic service tools and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5142.09 Repair/replace automatic/automated transmission systems and components**, including: fluids, transfer cases, housings, gear train, shafts, bearings, seals, springs, clutch packs, one-way clutches, band and servo assemblies, pumps, valve bodies, governors, modulators, power take-off (PTO) units, torque converters, flex plates, modulator/throttle devices, governor assemblies, retarding device, hoses, lines, fittings, linkages, cables, switches, relays, solenoids, sensors, modules, wiring harnesses, interface, driver display screens, diagnostic lights, and fastening and mounting devices, by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, and electronic service tools; heating, welding and cutting equipment, and lifting, rigging, and blocking devices, according to manufacturer's recommendations, specifications, and safety requirements.

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

**5142.10 Verify and document repair of automatic/automated transmission systems and components**, including: fluids, transfer cases, housings, gear train, shafts, bearings, seals, springs, clutch packs, one-way clutches, band and servo assemblies, pumps, valve bodies, governors, modulators, power take-off (PTO) units, torque converters, flex plates, modulator/throttle devices, governor assemblies, retarding devices, hoses, lines, fittings, linkages, cables, switches, relays, solenoids, sensors, modules, wiring harnesses, interfaces, driver display screens, diagnostic lights, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, and electronic service tools, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

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**U5143.0 Drive Shafts and Drive Axle Assemblies**

**General Performance Objective**

Diagnose and repair drive shafts and drive axle assemblies, by performing a visual inspection; diagnosing and troubleshooting drive shafts, drive axle assemblies and components; repairing drive shafts, drive axle assemblies and components; verifying repair of drive shafts, drive axle assemblies and components; according to manufacturer's specifications, recommendations, and safety requirements.

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**Skills**

**5143.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing or defective components, including: drive shafts, universal joint and hanger bearing assemblies, lubrication, flanges, yokes, housings, carriers, differentials, power dividers (inter-axle differentials), drop boxes, axle shafts, gear sets, bearings, seals, wheel end assemblies, controls, actuators, switches, sensors, wiring harnesses, coolers, pumps, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5143.02 Diagnose and troubleshoot drive shafts, drive axle assemblies and components**, including: housings, carriers, differentials, power dividers (inter- axle differentials), drop boxes, drive shafts, universal joint and hanger bearing assemblies, fluids, lubricants, flanges, yokes, axle shafts, gear sets, bearings, seals, wheel end assemblies, controls and actuators, switches, solenoids, sensors, wiring harnesses, coolers, pumps, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, temperature, odour, colour, tolerances, vibration/noise, corrosion, distortion, fractures, alignment, and phasing; using: hand, power, specialized, precision, and electronic service tools; and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5143.03 Repair/replace drive shafts, drive axle assemblies and components**, including: housings, carriers, differentials, power dividers (inter-axle differentials), drop boxes, drive shafts, universal joint and hanger bearing assemblies, fluids, lubricants, flanges, yokes, axle shafts, gear sets, bearings, seals, wheel end assemblies, controls and actuators, switches, solenoids, sensors, wiring harnesses, coolers, pumps, and fastening and mounting devices; by: reconditioning, exchanging, or servicing; using hand, power, specialized, electronic service, and precision measuring tools, lifting, rigging and blocking devices, heating, welding and cutting equipment, pullers, and presses; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5143.04 Verify and document repair of drive shafts, drive axle assemblies and components**, including: housings, carriers, differentials, power dividers (inter-axle differentials), drop boxes, drive shafts, universal joint assemblies, hanger bearing assemblies, fluids, lubricants, flanges, yokes, axle shafts, gear sets, bearings, seals, wheel end assemblies, controls and actuators, switches, solenoids, sensors, wiring harnesses, coolers, pumps, fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using hand, power, specialized, electronic service, and precision measuring tools, lifting, rigging and blocking devices, pullers, and presses; according to manufacturer’s recommendations, specifications, and safety requirements.

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



**U5144.0 Frames and Hitching/Coupling Systems**

**General Performance Objective**

Diagnose and repair hitching/coupling systems, by performing a visual inspection; diagnosing and troubleshooting frames and hitching systems and components, repairing frames and hitching systems and components, and verifying and documenting repair of frames, hitching systems and components; according to manufacturer’s recommendations, specifications, and safety requirements.

**Skills**

**5144.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, missing or defective components, including: frames, fifth- wheels, upper coupler assemblies, pintle hooks, ball hitches, lubrication, locking mechanisms, converter dollies, trailer configurations, controls, actuators, welds, and fastening and mounting devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5144.02 Diagnose and troubleshoot frames and hitching systems and components**, including: frames, fifth-wheels, upper coupler assemblies, pintle hooks, ball hitches, lubricant, locking mechanisms, converter dollies, trailer configurations, controls, actuators, welds, and fastening and mounting devices, by: visually inspecting, testing, and analysing performance and function, checking for: lubrication, noise/vibration, corrosion, alignment, bends, twists and fractures; using hand, power, specialized, electronic service, and precision measuring tools, lifting, rigging and blocking devices, heating, welding and cutting equipment, pullers, and presses; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5144.03 Repair frames and hitching systems and components**, including: lubrication, frames, fifth-wheels, upper coupler assemblies, pintle hooks, ball hitches, locking mechanisms, converter dollies, trailer configurations, controls, actuators, welds, and fastening and mounting devices, by: exchanging, reconditioning, servicing, reinforcing, or modifying; using: hand, power, specialized, electronic service, and precision measuring tools, lifting, rigging and blocking devices, heating, welding and cutting equipment, pullers, and presses; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5144.04 Verify and document repair of frames and hitching systems and components**, including: lubrication, frames, fifth-wheels, upper coupler assemblies, pintle hooks, ball hitches, locking mechanisms, converter dollies, trailer configurations, controls and actuators, welds, fastening and mounting devices, by: visually inspecting, testing and analysing performance and function; using: hand, power, specialized, electronic service, and precision measuring tools, lifting, rigging and blocking devices, pullers, and presses; according to manufacturer’s recommendations, specifications, and safety requirements.

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

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**U5145.0 Body and Trim**

**General Performance Objective**

Service and repair body and trim, by performing a visual inspection; diagnosing and troubleshooting body and trim, repairing body and trim, and verifying and documenting repair of body and trim; according to manufacturer's specifications, recommendations, and safety requirements.

**Skills**

**5145.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective components, including: cabs, bodies, doors, sleeper units, van or dump bodies, unitized construction (monocoque), vessels/tanks, catwalks, rails, ladders, roll-over protection, vapour recovery and loading systems, trim, seats, restraint systems, emergency exits, glazing material, conspicuity (reflective) materials, lift gates, steps, lights, ramps switches, relays, sensors, wiring harnesses, controls, actuators, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5145.02 Diagnose and troubleshoot body and trim**, including: cabs, bodies, doors, and sleeper units, van or dump bodies, unitized construction (monocoque), vessels/tanks, catwalks, rails, ladders, roll-over protection, vapour recovery and loading systems, trim, seats, restraint systems, emergency exits, glass, glazing material, conspicuity (reflective) materials, lift gates, steps, ramp sensors, lights, wiring harnesses, controls, actuators, and fastening and mounting devices, by: visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, wear, temperature, corrosion, pressure, vibration/ noise, leaks, cracks, and defective latching mechanisms; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5145.03**     **Repair body and/or trim**, including: cabs, bodies, doors, and sleeper units, van or dump bodies, unitized construction (monocoque), vessels/tanks, catwalks, rails, ladders, roll-over protection, vapour recovery, loading systems, trim, seats, restraint systems, emergency exits, glass, glazing material, conspicuity (reflective) materials, lift gates, steps, ramp sensors, lights, wiring harnesses, controls and actuators, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices, and heating, welding and cutting equipment; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5145.04**     **Verify and document repairs of body and/or trim**, including: cabs, bodies, doors, and sleeper units, van or dump bodies, unitized construction (monocoque), vessels/tanks, catwalks, rails, ladders, roll-over protection, vapour recovery, loading systems, trim, seats, restraint systems, emergency exits, glass, glazing material, conspicuity (reflective) materials, lift gates, steps, ramp sensors, lights, wiring harnesses, controls, actuators, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**U5146.0 Suspension Systems**

**General Performance Objective**

Service and repair suspension systems by: performing a visual inspection; diagnosing and troubleshooting suspension systems and components, repairing suspension systems and components and verifying repair of suspension systems and components; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5146.01 Perform visual inspection**, identifying system types and applications, by: checking for worn, loose, damaged, leaking, missing, or defective components, including: shock absorbers, springs (leaf, rubber block, air, and torsion bar), equalizers, shackles, bushings, walking beams, struts, sway bars, rubber blocks, hangers, lines, fittings, gauges, valves, controls, radius/torque rods, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5146.02 Diagnose and troubleshoot suspension systems and components**, including: air beams, shock absorbers, springs (leaf, rubber block, air, and torsion bar), equalizers, shackles, bushings, walking beams, struts, sway bars, blocks, hangers, lines, fittings, gauges, valves, controls, and radius/torque rods, and fastening and mounting devices, by: visually inspecting, testing, and analysing performance and function, checking for: vibration/noise, corrosion, distortion, fractures, leaks, pressure, colour, alignment, stability, ride height, load distribution and controls, and lift, or kneeling applications; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5146.03 Repair suspension systems and components**, including: air beams, shock absorbers, springs (leaf, rubber block, air, and torsion bar), equalizers, shackles, bushings, walking beams, struts, sway bars, blocks, hangers, lines, fittings, gauges, valves, controls, and radius/torque rods, and fastening and mounting devices; by: exchanging, reconditioning, aligning, or servicing; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices, and heating, welding and cutting equipment; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5146.04**     **Verify and document repair of suspension systems and components**, including: air beams, shock absorbers, springs (leaf, rubber block, air, and torsion bar), equalizers, shackles, bushings, fasteners, walking beams, struts, sway bars, blocks, hangers, lines, gauges, valves, controls, and radius/torque rods; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**U5147.0     Steering Systems**

**General Performance Objective**

Diagnose and repair steering systems, by: performing a visual inspection; diagnosing and troubleshooting steering systems and components, repairing steering system and components, verifying repair of steering systems and components, and aligning steering and axles; according to manufacturer’s specifications, recommendations, and safety requirements.

**Skills**

**5147.01**     **Perform visual inspection**, identifying system types and applications, checking for: worn, loose, damaged, leaking, missing. or defective components, including: steering boxes, pumps, drive mechanisms, cylinders, reservoirs, valves, controls, lines, hoses, fittings, linkages, columns, ball joints, king pins, universal joints, transfer boxes, switches, relays, sensors, modules, wiring harnesses, multiplexing, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5147.02 Diagnose and troubleshoot steering systems and components**, including: fluids, steering boxes, pumps, drive mechanisms, cylinders, reservoirs, valves, controls, lines, hoses, fittings, linkages, columns, ball joints, king pins, universal joints, transfer boxes, switches, relays, sensors, modules, wiring harnesses, multiplexing, and fastening and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for: opens/shorts/grounds, wear, odour, temperature, colour, vibration/noise, corrosion, distortion, fractures, alignment, contamination, pressure, leaks, flow, oil level and condition; using: hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, schematic diagrams, and safety requirements.

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

**5147.03 Repair/replace steering systems and components**, including: fluids, steering boxes, pumps, drive mechanisms, cylinders, reservoirs, valves, controls, lines, hoses, fittings, linkages, and columns, ball joints, king pins, universal joints, transfer boxes, switches, relays, sensors, modules, wiring harnesses, multiplexing, fastening and mounting devices; by visually inspecting, testing, and analysing performance and function; by: exchanging, reconditioning, servicing, adjusting, or aligning; using hand, power, specialized, precision, electronic service tools, lifting, rigging and blocking devices, heating, cutting and welding equipment and alignment equipment; according to manufacturer’s recommendations, specifications, and safety requirements.



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

**5147.04 Verify and document repair of steering systems and components,** including: fluids, steering boxes, pumps, drive mechanisms, cylinders, reservoirs, valves, controls, lines, hoses, fittings, linkages, columns, ball joints, king pins, universal joints, transfer boxes, switches, relays, sensors, modules, wiring harnesses, multiplexing, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices and alignment equipment; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**5147.05 Align steering and axles,** by: adjusting alignment and verifying; using: alignment equipment, hand, power, precision measuring and electronic service tools, torque wrenches, gauges, and shims; according to manufacturer’s recommendations, specifications, and safety requirements.

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

**U5148.0 Tires, Wheels, Rims, and Hubs**

**General Performance Objective**

Diagnose and repair tires, wheels, rims, and hubs: by: performing a visual inspection; diagnosing and troubleshooting tires, wheels, rims, hubs and components, repairing tires, wheels, rims, hubs and components, verifying repair of tires, wheels, rims, and hubs, balancing tires, wheels, rims, hubs, assemblies and components; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5148.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn loose, damaged, leaking, overheated, missing, or defective components, including: tires, tubes, rims, hubs, bearings, spacers, seals, valves, caps, tire ratings, mounting arrangements, locking channels, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5148.02 Diagnose and troubleshoot tires, wheels, rims, hubs, and components**, including: tires, tubes, valves, monitoring, automatic inflation systems, stems, caps, mounting arrangements, including: wide base singles, rims, hubs, locking channels, bearings, seals, wear rings, spacers, sensors, wiring harnesses, hub meters, lock wedges, cones, washers, flanges, tab locks, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: tire matching and condition, corrosion, odour, contamination, pressure, leaks, colour, temperature, vibration/noise, fractures, lubrication, and runout, using hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, gauges, stethoscopes, wheel balancers, and torque wrenches; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5148.03**     **Repair/replace tires, wheels, rims, hubs and components**, including: tires, tubes, valves, monitoring, automatic inflation systems, stems, caps, mounting arrangements, rims, hubs, locking channels, bearings, seals, wear rings, spacers, sensors, wiring harnesses, and hub meters, lock wedges, cones, washers, flanges, tab locks, and fastening and mounting devices; by: exchanging, reconditioning, servicing or balancing; using: hand, power, specialized, precision, electronic service tools, safety cages, balancing equipment, lifting, rigging and blocking devices, gauges, stethoscopes, wheel balancers, torque wrenches, gauges, seal installers, patches, plugs, sections, and heating, cutting and welding equipment; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5148.04**     **Verify and document repair of tires, wheels, rims, hubs and components**, including: tires, tubes, valves, monitoring, automatic inflation systems, stems, caps, mounting arrangements, rims, hubs, locking channels, bearings, seals, wear rings, spacers, sensors, wiring harnesses, and hub meters, lock wedges, cones, washers, flanges, tab locks, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using hand, power, specialized, precision, electronic service tools, safety cages, balancing equipment, lifting, rigging, and blocking devices, torque wrenches and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

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**U5149.0     Air Supply Systems**

**General Performance Objective**

Diagnose and repair air supply system and components, by: performing a visual inspection; diagnosing and troubleshooting air supply system and components; repairing air supply system and components, verifying and documenting repair of air supply system and components; diagnosing and troubleshooting auxiliary air components, repairing auxiliary air components, and verifying repair of auxiliary air components; according to manufacturer's specifications, recommendations and safety requirements.

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**Skills**

**5149.01     Performs visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing or defective components, including: compressors, lubrication system, fans, drive mechanisms, governors, air dryers, air filters, reservoirs, after coolers, reservoirs, lines, hoses, fittings, valves, unloader mechanisms, gauges, warning devices, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5149.02 Diagnose and troubleshoot air supply systems and components**, such as: compressors, lubrication systems, fans, drive mechanisms, governors, air dryers, air filters, reservoirs, after cooler, reservoirs, lines, hoses, fittings, valves, unloader mechanisms, gauges, warning devices, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: wear, odour, colour, corrosion, fractures, temperature, pressure, flow, vibration/ noise, contamination, and leaks, using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5149.03 Repair/replace air supply systems and components**, such as: compressors, lubrication system, fans, drive mechanisms, governors, air dryers, air filters, reservoirs, after coolers, reservoirs, lines, hoses, fittings, valves, unloader mechanisms, gauges, warning devices, and fastening and mounting devices, by: reconditioning, exchanging, servicing, or calibrating; using: hand, power, specialized, precision, electronic service tools, and lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5149.04**     **Verify and document repair of air supply systems and components**, such as: compressors, lubrication system, fans, drive mechanisms, governors, air dryers, air filters, reservoirs, after coolers, reservoirs, lines, hoses, fittings, valves, unloader mechanisms, gauges, warning devices, and fastening and mounting devices, by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5149.05**     **Diagnose and troubleshoot auxiliary air components**, including: air ride seats, wipers, door systems, valves, regulators, cylinders, dash controls, horns, tarpaulin systems, air starters, tail gate locks, switches, relays, sensors, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; checking for: opens/shorts/grounds, wear, odour, colour, temperature, pressure, leaks, vibration/noise, corrosion, and contamination, using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5149.06**     **Repair/replace auxiliary air components**, including: air ride seats, wipers, door systems, valves, regulators, cylinders, dash controls, horns, tarpaulin systems, air starters, tail gate locks, switches, relays, sensors, wiring harnesses, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5149.07**     **Verify and document repair of auxiliary air components**, including: air ride seats, wipers, door systems, valves, regulators, cylinders, dash controls, horns, tarpaulin systems, air starters, tail gate locks, switches, relays, sensors, wiring harnesses, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**U5150.0 Braking Systems**

**General Performance Objective**

Diagnose, troubleshoot and repair brake systems (air or hydraulic) by: performing a visual inspection and measurement; verify and document repair of brake systems and components; diagnose and troubleshoot and repair anti-lock systems (ABS), automatic traction control (ATC) and rollover stability control (RSC) systems and components; verify and document repairs of ABS, ATC, and RSC systems; according to manufacturer's recommendations, specifications, and safety requirements.

**Skills**

**5150.01 Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing, or defective components, including: drums, calipers, rotors, backing plates, dust shields, spiders, friction material, hoses, lines, fittings, S-cams, bushings, slack adjusters, valves, brake chambers, hydraulic fluid, wheel and master cylinders, boosters, switches, relays, sensors, modules, wiring harnesses, safety and warning devices, ABS, ATC and RSC, driver display screens, multiplexing, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**



**5150.02 Diagnose and troubleshoot brake system (air or hydraulic),** including: drums, calipers, rotors, backing plates, dust shields, spiders, friction material, hoses, lines, fittings, S- cams, bushings, slack adjusters, valves, brake chambers, hydraulic fluid, wheel and master cylinders, boosters, switches, relays, sensors, modules, wiring harnesses, safety and warning devices, ABS, ATC and RSC, driver display screens, multiplexing, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: wear, vibration/noise, pressure, corrosion, odour, colour, contamination, fractures, distortion, temperature, hydraulic fluid level and condition; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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**5150.03 Repair brake system (air or hydraulic),** including: drums, calipers, rotors, backing plates, dust shields, spiders, friction material, hoses, lines, fittings, S-cams, bushings, slack adjusters, valves, brake chambers, hydraulic fluid, wheel and master cylinders, boosters, switches, relays, sensors, modules, wiring harnesses, safety and warning devices, ABS, ATC and RSC systems, driver display screens, multiplexing, and fastening and mounting devices; by: exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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**5150.04**     **Verify and document repair of brake system (air or hydraulic),** including: drums, calipers, rotors, backing plates, dust shields, spiders, friction material, hoses, lines, fittings, S-cams, bushings, slack adjusters, valves, brake chambers, hydraulic fluid, wheel and master cylinders, boosters, switches, relays, sensors, modules, wiring harnesses, safety and warning devices, ABS, ATC and RSC systems, driver display screens, multiplexing, fastening and mounting devices; by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision, electronic service tools, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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**5150.05**     **Resurface brake drums and rotors,** using drums, rotors, and shoe gauges, specialized resurfacing equipment, and lifting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**U5151.0 Heating, Ventilation, Air Conditioning (HVAC) & Refrigeration Systems**

**General Performance Objective**

Diagnose, troubleshoot and repair heating, ventilation, air-conditioning (HVAC) and refrigeration systems, by performing: a visual inspection, measurements and repairs. Verifying and documenting those repairs according to manufacturer’s specifications, recommendations, and safety requirements.

**Skills**

**5151.01 Perform visual inspection**, identifying system types and applications, by: checking for: fluid levels and condition, and refrigerant levels, worn, loose, damaged, leaking, missing or defective components, including: hoses, lines, fittings, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, compressors and drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, receiver/dryers, accumulators, ducting, and fastening and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5151.02 Diagnose and troubleshoot HVAC systems and components**, such as: coolants, refrigerants, receiver/dryers, accumulators, hoses, lines, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, ducting, fastening and mounting devices; by: measuring, testing, and analysing performance and function, checking for: opens/shorts/grounds, wear, odour, colour, corrosion, fractures, temperature, contamination, fluid levels and condition, vibration/noise, pressure and leaks; using: hand, power, specialized, precision, electronic service tools, vacuum pumps, and lifting, rigging. and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5151.03 Repair HVAC systems and components**, such as: coolants, refrigerants, receiver/dryers, accumulators, hoses, lines, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, ducting, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, electronic service tools, vacuum pumps, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5151.04 Verify and document repair of HVAC systems and components**, including: coolants, refrigerants, receiver/dryers, accumulators, hoses, lines, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, ducting, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, vacuum pumps, and lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5151.05 Diagnose and troubleshoot refrigeration systems and components**, including: refrigerant, hoses, lines, fittings, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, compressors, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, receiver/dryers, accumulators, ducting, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, wear, odour, colour, corrosion, temperature, contamination, vibration/ noise, pressure, leaks, fluid levels and condition, and refrigerant levels; using: hand, power, specialized, precision, electronic service tools, leak detection devices, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5151.06 Repair refrigeration systems and components**, including: refrigerant, hoses, lines, fittings, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, compressors, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, receiver/dryers, accumulators, ducting, and fastening and mounting devices; by: exchanging, reconditioning, or servicing, using: hand, power, specialized, precision, electronic service tools, leak detection devices, vacuum pumps, recovery and charging equipment, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements

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

**5151.07**     **Verify and document repair of refrigeration systems and components**, including: refrigerant, hoses, lines, fittings, controls, actuators, cables, valves, switches, relays, sensors, modules, wiring harnesses, warning devices, compressors, drive mechanisms, motors, pumps, filters, heat exchangers, auxiliary heaters, receiver/dryers, accumulators, ducting, and fastening and mounting devices; by: visually inspecting, testing, and analysing performance and function; using: hand, power, specialized, precision, electronic service tools, leak detection devices, vacuum pumps, recovery and charging equipment, lifting, rigging, and blocking devices, torque wrenches, and gauges; according to manufacturer's recommendations, specifications, and safety requirements.

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

**U5152.0     Hydraulic Systems**

**General Performance Objective**

Diagnose and repair hydraulic systems and components, by: performing a visual inspection; diagnosing and troubleshooting hydraulic systems and components, repairing hydraulic systems and components, and verifying repair of hydraulic systems and components; according to manufacturer's specifications, recommendations, and safety requirements.

**Skills**

**5152.01**     **Perform visual inspection**, identifying system types and applications, by: checking for: worn, loose, damaged, leaking, missing or defective components, including: pumps, drive mechanisms, cylinders, reservoirs, valves, seals, controls, gauges, screens, filters, coolers, power take-off (PTO) units, lines, hoses, fittings, oil level and condition, switches, relays sensors, modules, wiring harnesses, driver display screens, and fastening and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

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

**\* For a compulsory trade, a Trainer must hold a certificate of Qualification in that trade as per section 10(1) of BOSTA and be registered with Skilled Trades Ontario.**

**5152.02 Diagnose and troubleshoot hydraulic systems and components,** including: fluid, pumps, drive mechanisms, cylinders, reservoirs, valves, seals, controls, gauges, screens, filters, coolers, power take-off (PTO) units, lines, hoses, fittings, switches, relays, sensors, modules, wiring harnesses, driver display screens, and fastening and mounting devices, by: visually inspecting, testing, and analysing performance and function, checking for: opens/shorts/grounds, wear, fluid level and condition, odour, colour, corrosion, vibration/noise, cavitation, contamination, pressure, flow, and temperature, using: hand, power, specialized, precision, electronic service tools, flow meters, lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, schematic diagrams, and safety requirements.

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

**5152.03 Repair hydraulic systems and components**, including: fluid, pumps, drive mechanisms, cylinders, reservoirs, valves, seals, controls, gauges, screens, filters, coolers, power take-off (PTO) units, lines, hoses, fittings, switches, relays, sensors, modules, wiring harnesses, driver display screens, and fastening and mounting devices; by: exchanging, reconditioning, or servicing; using: hand, power, specialized, precision, electronic service tools, flow meters, lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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

**5152.04 Verify and document repair of hydraulic systems and components**, including: fluid, pumps, drive mechanisms, cylinders, reservoirs, valves, seals, controls, gauges, screens, filters, coolers, power take-off (PTO) unit, lines, hoses, fittings, switches, relays, sensors, modules, wiring harnesses, driver display screens, and fastening and mounting devices, by: visually inspecting, testing, and analyzing performance and function; using: hand, power, specialized, precision, electronic service tools, flow meters, lifting, rigging, and blocking devices; according to manufacturer's recommendations, specifications, and safety requirements.

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 Journeyman 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](http://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](http://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](http://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](http://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](http://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](http://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](http://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 D — Local Service Delivery Offices in Ontario

For current office listings visit: [ontario.ca/page/employment-Ontario-apprenticeship-offices](http://ontario.ca/page/employment-Ontario-apprenticeship-offices)

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

### Competency Analysis Profile (CAP) Chart

<b>U5135.0</b> Occupational Health and Safety Procedures	<b>5135.01</b> Identify potential workplace health and safety hazards	<b>5135.02</b> Handle, store and dispose of hazardous materials	<b>5135.03</b> Wear and maintain personal protective equipment	<b>5135.04</b> Comply with workplace-related legislation	<b>5135.05</b> Interpret and apply service-related information	
	<b>5135.06</b> Practice good housekeeping in workplace	<b>5135.07</b> Comply with WHMIS guidelines				
	<b>U5136.0</b> Electrical Systems - Starting and Charging	<b>5136.01</b> Perform visual inspection	<b>5136.02</b> Diagnose and troubleshoot starting systems and components	<b>5136.03</b> Repair starting systems and components	<b>5136.04</b> Verify and document repair of starting system and components	<b>5136.05</b> Diagnose and troubleshoot charging systems and components
		<b>5136.06</b> Repair charging system and components	<b>5136.07</b> Verify and document repair of charging system and components			

**Competency Analysis Profile: Truck and Coach Technician 310T** *(all unshaded skill sets must be completed)*

<b>U5137.0 Electrical Systems – Body Electrical and Components</b>	<b>5137.01</b> Perform visual inspection	<b>5137.02</b> Diagnose and troubleshoot body electrical systems and components	<b>5137.03</b> Repair body electrical systems and components	<b>5137.04</b> Verify and document repair of body electrical systems and components	<b>5137.05</b> Repair system warning devices
	<b>5137.06</b> Verify and document repair of system warning devices	<b>5137.07</b> Diagnose and troubleshoot fire suppression systems and components	<b>5137.08</b> Repair fire suppression systems and components	<b>5137.09</b> Verify and document repair of fire suppression systems and components	<b>5137.10</b> Repair coach destination signs
	<b>5137.11</b> Verify and document repair of coach destination signs	<b>5137.12</b> Diagnose and troubleshoot supplemental restraint systems (SRS) and components	<b>5137.13</b> Repair supplemental restraint systems (SRS) and components	<b>5137.14</b> Verify and document repair of supplemental restraint systems (SRS) and components	
	<b>5138.01</b> Perform visual inspection	<b>5138.02</b> Diagnose and troubleshoot fuel systems and components	<b>5138.03</b> Repair fuel systems and components	<b>5138.04</b> Verify and document repair of fuel systems and components	

**Competency Analysis Profile: Truck and Coach Technician 310T** (all unshaded skill sets must be completed)

**U5139.0  
Engine  
Systems –  
Gasoline and  
Diesel**

**5139.01**  
Perform visual  
inspection

**5139.02**  
Diagnose and  
troubleshoot  
cooling systems  
and components

**5139.03**  
Repair cooling  
systems and  
components

**5139.04**  
Verify and  
document repair  
of cooling  
systems and  
components

**5139.05**  
Diagnose and  
troubleshoot  
engine  
lubricating  
systems and  
components

**5139.06**  
Repair engine  
lubricating  
systems and  
components

**5139.07**  
Verify and  
document repair  
of engine  
lubricating  
systems and  
components

**5139.08**  
Diagnose and  
troubleshoot  
cylinder head  
and components

**5139.09**  
Repair cylinder  
heads and  
components

**5139.10**  
Verify and  
document repair  
of cylinder head  
and components

**5139.11**  
Diagnose and  
troubleshoot  
engine block and  
components

**5139.12**  
Repair engine  
block and  
components

**5139.13**  
Verify and  
document repair  
of engine block  
and components

**5139.14**  
Diagnose and  
troubleshoot  
auxiliary coolers  
and components

**5139.15**  
Repair auxiliary  
coolers and  
components

**5139.16**  
Verify and  
document repair  
of auxiliary  
coolers and  
components



**Competency Analysis Profile: Truck and Coach Technician 310T** *(all unshaded skill sets must be completed)*

<b>U5140.0</b> <b>Engine Management Systems</b>	<b>5140.01</b> Perform visual inspection	<b>5140.02</b> Diagnose and troubleshoot fuel control systems and components	<b>5140.03</b> Repair fuel control systems and components	<b>5140.04</b> Verify and document repair of fuel control systems and components	<b>5140.05</b> Diagnose and troubleshoot electronic ignition systems and components	
	<b>5140.06</b> Repair electronic ignition systems and components	<b>5140.07</b> Verify and document repair of electronic ignition systems and components	<b>5140.08</b> Diagnose and troubleshoot electronically-controlled engine systems and components	<b>5140.09</b> Repair electronically-controlled engine systems and components	<b>5140.10</b> Verify and document repair of electronically-controlled engine systems and components	
	<b>5140.11</b> Perform engine tune-ups					
	<b>U5141.0</b> <b>Exhaust, Intake, and Emission Control Systems</b>	<b>5141.01</b> Perform visual inspection	<b>5141.02</b> Diagnose and troubleshoot exhaust, intake, and emission control systems and components	<b>5141.03</b> Repair exhaust, intake, and emission control systems and components	<b>5141.04</b> Verify and document repair of exhaust, intake, and emission control systems and components	<b>5141.05</b> Diagnose and troubleshoot turbocharger systems and components
		<b>5141.06</b> Repair/Replace turbocharger systems and components	<b>5141.07</b> Verify and document repair of turbocharger systems and components			

**Competency Analysis Profile: Truck and Coach Technician 310T** *(all unshaded skill sets must be completed)*

<b>U5142.0</b> <b>Transmission Systems</b>	<b>5142.01</b> Perform visual inspection	<b>5142.02</b> Diagnose and troubleshoot clutch systems and components	<b>5142.03</b> Repair/Replace clutch systems and components	<b>5142.04</b> Verify and document repair of clutch systems and components	<b>5142.05</b> Diagnose and troubleshoot manual systems and components
	<b>5142.06</b> Repair manual systems and components	<b>5142.07</b> Verify and document repair of manual transmissions and components	<b>5142.08</b> Diagnose and troubleshoot automatic/automated transmission systems and components	<b>5142.09</b> Repair/Replace automatic/automated transmission systems and components	<b>5142.10</b> Verify and document repair of automatic/automated transmission systems and components
<b>U5143.0</b> <b>Drive Shafts and Drive Axle Assemblies</b>	<b>5143.01</b> Perform visual inspection	<b>5143.02</b> Diagnose and troubleshoot drive shafts, drive axle assemblies and components	<b>5143.03</b> Repair/Replace drive shafts, drive axle assemblies and components	<b>5143.04</b> Verify and document repair of drive shafts, drive axle assemblies and components	
<b>U5144.0</b> <b>Frames and Hitching-Coupling Systems</b>	<b>5144.01</b> Perform visual inspection	<b>5144.02</b> Diagnose and troubleshoot frames, hitching systems, and components	<b>5144.03</b> Repair frames and hitching systems and components	<b>5144.04</b> Verify and document repair of frames, hitching systems and components	

**Competency Analysis Profile: Truck and Coach Technician 310T** *(all unshaded skill sets must be completed)*

<b>U5145.0</b> <b>Body and Trim</b>	<b>5145.01</b> Perform visual inspection	<b>5145.02</b> Diagnose and troubleshoot body and/or trim	<b>5145.03</b> Repair body and/or trim	<b>5145.04</b> Verify and document repair of body and/or trim	
<b>U5146.0</b> <b>Suspension Systems</b>	<b>5146.01</b> Perform visual inspection	<b>5146.02</b> Diagnose and troubleshoot suspension systems and components	<b>5146.03</b> Repair suspension system and components	<b>5146.04</b> Verify and document repair of suspension systems and components	
<b>U5147.0</b> <b>Steering Systems</b>	<b>5147.01</b> Perform visual inspection	<b>5147.02</b> Diagnose and troubleshoot steering systems and components	<b>5147.03</b> Repair/Replace steering systems and components	<b>5147.04</b> Verify and document repair of steering system and components	<b>5147.05</b> Align steering and axles
<b>U5148.0</b> <b>Tires, Wheels, Rims, and Hubs</b>	<b>5148.01</b> Perform visual inspection	<b>5148.02</b> Diagnose and troubleshoot tires, wheels, rims, hubs, and components	<b>5148.03</b> Repair tires, wheels, rims, hubs and components	<b>5148.04</b> Verify and document repair of tires, wheels, rims, hubs and components	

**Competency Analysis Profile: Truck and Coach Technician 310T** *(all unshaded skill sets must be completed)*

<b>U5149.0</b> <b>Air Supply System</b>	<b>5149.01</b> Perform visual inspection	<b>5149.02</b> Diagnose and troubleshoot air supply systems and components	<b>5149.03</b> Repair/Replace air supply system and components	<b>5149.04</b> Verify and document repair of air supply system and components	<b>5149.05</b> Diagnose and troubleshoot auxiliary air components
	<b>5149.06</b> Repair/replace auxiliary air components	<b>5149.07</b> Verify and document repair of auxiliary air components			
<b>U5150.0</b> <b>Braking Systems</b>	<b>5150.01</b> Perform visual inspection	<b>5150.02</b> Diagnose and troubleshoot brake system (air or hydraulic)	<b>5150.03</b> Repair brake system (air or hydraulic)	<b>5150.04</b> Verify and document repair of brake system (air or hydraulic)	<b>5150.05</b> Resurface brake drums, lines and rotors
<b>U5151.0</b> <b>Heating, Ventilation, Air Conditioning (HVAC) and Refrigeration Systems</b>	<b>5151.01</b> Perform visual inspection	<b>5151.02</b> Diagnose and troubleshoot HVAC systems and components	<b>5151.03</b> Repair HVAC systems and components	<b>5151.04</b> Verify and document repair of HVAC systems and components	<b>5151.05</b> Diagnose and troubleshoot refrigeration systems and components
	<b>5151.06</b> Repair refrigeration systems and components	<b>5151.07</b> Verify and document repair of refrigeration systems and components			

**U5152.0**  
**Hydraulic**  
**Systems**

**5152.01**  
Perform visual  
inspection

**5152.02**  
Diagnose and  
troubleshoot  
hydraulic  
systems and  
components

**5152.03**  
Repair hydraulic  
systems and  
components

**5152.04**  
Verify and  
document repair  
of hydraulic  
systems and  
components



# 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](http://red-seal.ca)



[SkilledTradesOntario.ca](http://SkilledTradesOntario.ca)



Truck and Transport Mechanic