ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship Training Standard Log Book

Heavy Duty Equipment Technician

421A

What Is This About?

The Apprenticeship Training Standard Log Book identifies all the skills associated with your trade in Ontario. It is written in statements that describe how you, the apprentice, must perform each skill in order to be considered competent in that skill.

Training As An Apprentice

- Notify Ministry of Training, Colleges and Universities (MTCU) staff **immediately** of any changes to contact information or training agreement, especially if you change sponsors.
- Review the Log Book regularly with your trainer and sponsor to track your progress.
- 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.
- Pay your annual membership fee to the Ontario College of Trades and keep your membership in good standing.

Completing Your Log Book

There are two types of signatures required in your Log Book:

Skill Confirmation

You and your trainer sign off each required skill to confirm that you have demonstrated competency in that skill.

Skill Set Confirmation

After you and your trainer have signed off all the required skills in a skill set, **your sponsor** signs the signature box at the end of each skill set to confirm your competency in the skill set.

Shaded boxes in your Log Book 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.

Changing Sponsors

- Contact the MTCU immediately if you change sponsors as you will need to sign a new Registered Training Agreement.
- Record your original Sponsor's information in Sponsor Record #1 (the sponsor who has signed your initial Registered Training Agreement).

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.

ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprentice Name: _____

Address: _____

_____

Phone Number: _____

Email Address: _____

Trade: _____

Ministry of Training, Colleges and Universities Registered Training Agreement #

OCOT Membership #:

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 Training Standard Log Book or about your Apprenticeship program, contact your Apprenticeship office (see Appendix D in this book) or the Employment Ontario hotline at: 1-800-387-5656.

You must become a member of the College of Trades Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College of Trades website at: collegeoftrades.ca

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Any updates to this publication are available on-line; to download this document in PDF format, please follow the link: collegeoftrades.ca.

TERMS AND CONDITIONS AS PER REGISTERED TRAINING AGREEMENT

The Apprentice agrees:

- **to inform the Ministry of Training, Colleges and Universities of any change to their 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 Apprentice Training Standard Log Book (Log Book) for the Trade which is part of the apprenticeship program established by the Ontario College of Trades for the trade;
- to obtain written verification from the Sponsor and the Trainer(s) that the requirements in the Log Book for the trade have been met.

The Sponsor agrees:

- to ensure that the Apprentice is provided with the training required as part of the apprenticeship program established by the College of Trades for this trade;
- to ensure that the Trainer(s) verifies, in writing, when each skill identified in the Log Book for the trade has been successfully completed by the Apprentice;
- 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.

RESOURCE	LINK
Red Seal Program	red-seal.ca
Ministry of Training, Colleges and Universities	tcu.gov.on.ca
Employment Ontario	tcu.gov.on.ca/eng/employmentontario.ca
Service Canada	servicecanada.gc.ca
Ontario College of Trades and Apprenticeship Act, 2009	*Ontario College of Trades and Apprenticeship Act, 2009*
Ontario Ministry of Labour – Health and Safety Partners	labour.gov.on.ca
College of Trades Appointments Council	cot-appointments.ca
Essential Skills Ontario	essentialskillsontario.ca
Exam Preparation Guide	collegeoftrades.ca

INTRODUCTION TO THE LOG BOOK

On April 8th, 2013, the Ontario College of Trades (College) became responsible for the development and maintenance of Log Books in the Province of Ontario.

Please refer to the College of Trades website for the most accurate and up-to-date information: collegeoftrades.ca

This Log Book is intended to be used by the Apprentice and Sponsor as an official record of training. The completion of this document is necessary to complete your apprenticeship and receive your Certification of Apprenticeship.

The Log Book identifies skills required for this trade and its related training program. It has been written in statements which describe how you, the Apprentice, must perform each skill in order to become competent in your trade.

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

This on-the-job Log Book is a document issued to Apprentices who sign a Registered Training Agreement in the Province of Ontario. It is designed to record an Apprentice's acquired skills and time worked for the trade to which they are registered. This Log Book is developed by the Ontario College of Trades and used by the Ministry of Training, Colleges and Universities.

This Apprenticeship Log Book for Heavy Duty Equipment Technician 421A was developed in consultation with representatives from industry and may include members from a related Trade Board/Working Committees.

The information presented in this standard is, to the best of our knowledge, current at time of printing and is intended for general application.

This **Heavy Duty Equipment Technician Log Book** was developed in consultation with representatives from the trade that included the Heavy Duty Equipment Technician Trade Board and Working Committee comprised of technicians active "on the tools". It was also verified by industry.

The care and maintenance of this document is the joint responsibility of the apprentice and the employer/sponsor. The Training Standards were developed specifically for documenting the apprentice's acquisition of skills. The document becomes the only record of an apprentice's training.

ROLES AND RESPONSIBILITIES

Ontario College of Trades
Under the *Ontario College of Trades and Apprenticeship Act, 2009* (OCTAA), the College of Trades is responsible for:

- Establishing and maintaining qualifications for membership;
- Issuing Certificates of Qualification and Statements of Membership;
- Maintaining a Public Register of members;
- Receiving and investigating complaints, and determining disciplinary action;
- Establishing Apprenticeship Programs, Training Standards and Scopes of Practice for each trade;
- Conducting Trade Equivalency Assessments;
- Determining Journeyperson-to-Apprentice ratios;
- Addressing compliance with legislation (OCTAA) and regulations; and,
- Promoting the skilled trades and conducting research.

For any matters related to your membership in the Apprentices class, you must contact the College of Trades directly at: (647) 847-3000 or toll free at: 1(855) 299-0028.

Ministry of Training, Colleges and Universities
Is responsible for:

- Registering Training Agreements;
- Approving which persons may provide apprenticeship training;
- Approving Training Delivery Agents;
- Issuing Certificates of Apprenticeship;
- Administering Certificate of Qualification examinations;
- Promoting skilled trades and apprenticeship;
- Conducting policy development, evaluation and research; and,
- Passing regulations.

For any matter related to your Registered Training Agreement or completing your apprenticeship, you must contact your Local Apprenticeship Office at the Ministry of Training, Colleges and Universities.

Roles and Responsibilities of the Apprentice

An Apprentice is an individual who has entered into an Registered Training Agreement with a Sponsor to receive training in a trade as part of an apprenticeship program established by the College of Trades.

As an Apprentice, you have certain roles and responsibilities to follow throughout your apprenticeship training:

Steps:

1. You must become a member of the College of Trades Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College of Trades website at: collegeoftrades.ca

2. As an Apprentice, you are responsible for completing skills or skill sets in this Log Book and ensuring that they are dated and signed by both you and your Trainer.

3. You must also ensure your Skill Set Completion Form is completed and signed by your current Sponsor once you have demonstrated competence in all the mandatory skills in this Log Book. Once this is done, we recommend you submit the Log Book to your local Ministry of Training, Colleges and Universities office.

4. You are responsible for informing the staff at your local Ministry of Training, Colleges and Universities 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.

5. You must present the Apprentice Completion Form (Please refer to Appendix B), once all unshaded skills and skill sets have been completed within this document, along with your authorized Log Book to your local Ministry of Training, Colleges and Universities office.

Roles and Responsibilities of Sponsors and Trainers

Log Books identify the on-the-job skills required for a trade and its related training program.

This Log Book has been written in concise statements which describe how well an Apprentice must perform each skill in order to become competent. Competence means being able to perform to the required standard.

By using this Log Book, Trainers will be able to ensure that the Apprentice is developing skills detailed for the trade.

Trainers and Apprentices are required to sign off and date the skills following each successful acquisition.

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.

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.

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, employees and the public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to or cause an accident or injury.

It is generally recognized that a safe attitude contributes to an accident free environment. Everyone will benefit as a result of a healthy attitude towards prevention of accidents.

A tradesperson is possibly exposed to more hazards than any other person in the work force and, therefore, should be familiar with and apply Occupational Health and Safety Act and Regulations dealing with personal safety and the personal safety rules applying to each task.

Legal and Administrative Aspects of Safety:

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer and employee.

Employer's Responsibilities - The employer is responsible for:

- Providing and maintaining safety equipment and protective devices;
- Ensuring proper safe work clothing is worn;
- Enforcing safe working procedures;
- Providing safeguards for machinery, equipment and tools;
- Observing all accident prevention regulations; and,
- Training employees in the safe use and operation of equipment.

Employee's Responsibilities - The employee is responsible for:

- Working in accordance with the safety regulations pertaining to the job environment;
- Working in such a way as not to endanger themselves or fellow employees and the public.

Workplace Health and Safety's Responsibilities:

- Workplace Health and Safety (Ontario's Ministry of Labour) will conduct periodic inspections of the workplace to ensure that safety regulations for industry are being observed.

APPRENTICESHIP PROGRAM SUMMARY

The Scope of Practice for the trade of (HEAVY DUTY EQUIPMENT TECHNICIAN) is set out in section 12 of Ontario Regulation 277/11 under OCTAA and reads as follows:

The scope of practice for the trade of heavy duty equipment technician includes inspecting, diagnosing, repairing and verifying the repair of the following for heavy duty equipment:

1. Engine systems.
2. Engine management systems.
3. Exhaust, intake and emission control systems.
4. Electrical systems – starting and charging.
5. Hydraulic systems.
6. Clutches and transmissions.
7. Drive shafts, drive axle assemblies and final drives.
8. Steering systems.
9. Braking systems.
10. Suspension systems.
11. Air supply and auxiliary air systems.
12. Heating, ventilation and air conditioning systems.
13. Body and trim.
14. Tires, wheels, frames and undercarriages.
15. Earth moving equipment. O. Reg. 277/11, s. 12.

While the Log Book draws on the scope of practice regulation (Section 12 of Ontario Regulation 277/11 under OCTAA). The Log Book 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 **6280** hours as the duration necessary for any Apprentice to become competent in the skills required. There may be circumstances in which the duration varies from this guideline.

In-School 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.

Journeyperson to Apprentice Ratio

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

Program Requirements

Wage Rates – there are no minimum wage rates in regulation for this trade

Compulsory and Voluntary Classification

Regulations under OCTAA set out the regulated trades in Ontario and the classification of each trade as either "compulsory" or "voluntary." The trade of HEAVY DUTY EQUIPMENT TECHNICIAN is VOLUNTARY.

Essential Skills

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change. Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

A series of tools endorsed by the Canadian Council of Directors of Apprenticeship (CCDA) have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- Understand how essential skills are used in the trades;
- Learn about individual essential skills strengths and areas for improvement, and,
- Improve essential skills and increase success in an apprenticeship program.

A link to the complete essential skills profile for Red Seal trades can be found at red-seal.ca.

Eligibility for Apprenticeship Program Completion

The Apprentice must:

- Achieve competency in all mandatory (unshaded) skills as identified in the Log Book
- Complete the in-school training as outlined in the industry and MTCU-approved Curriculum Standard

It is the responsibility of an Apprentice to maintain a training record in the form of an Ontario College of Trades Log Book or Schedule of Training. The Sponsor and Trainer are required to sign off when competencies in the trade are achieved.

Eligibility for Exam Challenge (for Non-Apprentice C of Q Applicants)

The challenger must:

- Provide proof of competency in all mandatory (unshaded) skills as identified in the Log Book or Schedule of Training;
- Demonstrate that he or she has acquired **7000** hours of on-the-job training

TRAINING THE APPRENTICE

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 habits;
- Use your Apprenticeship Log Book as a journal to keep track of the skills you have acquired;
- Listen to the suggestions of your Trainer;
- Discuss your training needs with your Sponsor;
- Review your training plan with your Training Consultant, Trainer, or Sponsor;
- 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. Once a 'set of skills' have been signed off, ensure your Sponsor signs off this area as well.

Sponsor

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.

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.);
- Encourage safe work habits;
- Provide time for the Trainer to 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;
- Set out clear expectations, and recognize good performance;
- Involve both the Apprentice and Trainer in developing the training plan and observe frequently;
- Provide constructive feedback and conduct regular performance reviews involving the Apprentice and Trainer;
- Use the Log Book 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.

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 a member of the College of Trades Journeypersons Class.
In voluntary trades, a Trainer is an individual who holds one of the following:

- A valid Certificate of Qualification and is a member of the College of Trades Journeypersons Class; or,
- Holds a Statement of Membership in the College of Trades Tradespersons Class; or,
- Holds a Certificate of Qualification previously issued by Ministry of Training, Colleges and Universities; or,
- Holds 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 (eligible to apply to College membership in the Journeypersons or Tradespersons Classes) or has the skills outlined in the Log Book.

A classroom instructor is not permitted to sign-off the skills contained within this Log Book.

In this trade a trainer must be competent in the skill, but it is not mandatory to be a member of the College of Trades or have a Certificate of Qualification (CofQ).

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 Log Book with the Apprentice and develop a training plan;
- Set out clear expectations and recognize good performance;
- Ensure that the Apprentice receives on-the-job trade training experience as outlined in this document;
- Encourage and respond to all questions;
- Be patient;
- Explain, show and demonstrate the skill;
- Provide continuous feedback;
- Sign-off skills when your Apprentice demonstrates competency, and,
- Use the Log Book as a guide to evaluate competence in each skill area. By using the Log Book, Trainers will be able to ensure that the Apprentice is developing skills outlined in this document.

NOTICE OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this Log Book to the Ministry of Training, Colleges and Universities. You will be required to disclose the signed Apprenticeship Completion form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry of Training, Colleges and Universities 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 Ministry of Training, Colleges and Universities will disclose information about your program completion and your Certificate of Apprenticeship to the Ontario College of Trades, as it is necessary for the College of Trades to carry out its responsibilities.

3. Your personal information is collected, used and disclosed by the Ministry under the authority of the *Ontario College of Trades and Apprenticeship Act, 2009*.

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 Training, Colleges and Universities
   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.

COMPETENCY ANALYSIS PROFILE

(All unshaded skill sets must be demonstrated/completed)

SKILL SETS	***SKILLS***				
OCCUPATIONAL HEALTH AND SAFETY PROCEDURES **U8000.0**	Identify and take corrective action against potential workplace health and safety hazards 8000.01	Handle, store and dispose of hazardous workplace materials 8000.02	Wear and maintain personal protective equipment 8000.03	Comply with workplace-related legislation 8000.04	Interpret and apply service-related information 8000.05
	Practice good housekeeping in the workplace 8000.06	Comply with Workplace Hazardous Materials Information System (WHMIS) 8000.07			
ENGINE SYSTEMS **U8001.0**	Perform visual inspection, identifying systems type and applications 8001.01	Diagnose and troubleshoot cooling systems and components 8001.02	Repair cooling systems and components 8001.03	Verify repair of cooling systems and components 8001.04	Diagnose and troubleshoot engine lubricating systems and components 8001.05
	Repair engine lubricating systems and components 8001.06	Verify repair of engine lubricating systems and components 8001.07	Diagnose and troubleshoot cylinder heads and components 8001.08	Repair cylinder heads and components 8001.09	Verify repair of cylinder heads and components 8001.10
	Diagnose and troubleshoot engine blocks and components 8001.11	Repair engine blocks and components 8001.12	Verify repair of engine blocks and components 8001.13		

FUEL SYSTEMS **U8002.0**	Perform visual inspection, identifying fuel subsystems type and applications 8002.01	Diagnose and troubleshoot fuel subsystems and components 8002.02	Repair fuel subsystems and component 8002.03	Verify repair of fuel subsystems and components 8002.04	Perform a visual inspection of mechanical controlled fuel systems and components 8002.05
	Diagnose and troubleshoot mechanical controlled fuel systems and components 8002.06	Repair mechanical controlled fuel systems and components 8002.07	Verify repair of mechanical controlled fuel systems and components 8002.08	Perform mechanical controlled engine tune-ups 8002.09	Perform a visual inspection of electronic controlled fuel engine management systems and components 8002.10
	Diagnose and Troubleshoot electronic controlled fuel engine management systems and component 8002.11	Repair electronic controlled fuel engine management systems and components 8002.12	Verify repair of electronic controlled fuel management systems and components 8002.13	Perform electronic controlled fuel engine tune-ups 8002.14	
INTAKE, EXHAUST AND EMISSION CONTROL SYSTEMS **U8003.0**	Perform visual inspection, identifying intake and exhaust systems type and applications 8003.01	Diagnose and troubleshoot, intake and exhaust systems and components 8003.02	Repair intake and exhaust systems and components 8003.03	Verify repair of intake and exhaust systems and components 8003.04	Perform a visual inspection, identifying turbocharger/blower systems and components 8003.05
	Diagnose and troubleshoot turbocharger/blower systems and components 8003.06	Repair turbocharger/blower systems and components 8003.07	Verify repair of turbocharger/ blower systems and components 8003.08	Perform visual inspection, identifying emission control systems and components 8003.09	Diagnose and troubleshoot emission control systems and components 8003.10
	Repair emission control systems and components 8003.11	Verify repair of emission control systems and components 8003.12			
ELECTRICAL SYSTEMS **U8004.0**	Perform visual inspection, identifying systems type and applications 8004.01	Diagnose and troubleshoot batteries 8004.02	Serve and boost/charge batteries 8004.03	Diagnose and troubleshoot starting systems and components 8004.04	Repair starting systems and components 8004.05
	Verify repair of starting systems and components 8004.06	Diagnose and troubleshoot charging systems and components 8004.07	Repair charging systems and components 8004.08	Verify repair of charging systems and components 8004.09	Diagnose and troubleshoot electrical/ electronic and computer controlled systems and components 8004.10

	Repair electrical/ electronic and computer controlled systems and components 8004.11	Verify repair of electrical/electronic and computer controlled systems and components 8004.12	Diagnose and troubleshoot hybrid drives and components 8004.13	Repair hybrid drives and components 8004.14	Verify repair of hybrid drives and components 8004.15
HYDRAULIC SYSTEMS **U8005.0**	Perform an inspection, identifying electronic/computer, mechanical and pilot operated hydraulic systems type and applications 8005.01	Diagnose and troubleshoot mechanical/pilot controlled hydraulic systems and components 8005.02	Repair mechanical/pilot controlled hydraulic systems and components 8005.03	Verify repair of mechanical/pilot controlled hydraulic systems and components 8005.04	Diagnose and troubleshoot electronic/computer controlled hydraulic systems and components 8005.05
	Repair electronic/ computer controlled hydraulic systems and components 8005.06	Verify repair of electronic/computer controlled hydraulic systems and components 8005.07			
HYDROSTATIC AND TRANSMISSION SYSTEMS **U8006.0**	Perform visual inspection, identifying hydrostatic and transmission systems type and applications 8006.01	Diagnose and troubleshoot clutch systems and components 8006.02	Repair clutch systems and components 8006.03	Verify repair of clutch systems and components 8006.04	Diagnose and troubleshoot manual transmissions/transfer cases and components 8006.05
	Repair manual transmissions/transfer cases and components 8006.06	Verify repair of manual transmissions/trans fer cases and components 8006.07	Diagnose and troubleshoot torque converters, lock-up clutches and components 8006.08	Repair torque converters, lock-up clutches and components 8006.09	Verify repair of torque converters, lock-up clutches and components 8006.10
	Diagnose and troubleshoot powershift transmissions and components 8006.11	Repair powershift transmissions and components 8006.12	Verify repair of powershift transmissions and components 8006.13	Diagnose and troubleshoot hydrostatic transmissions and components 8006.14	Repair hydrostatic transmissions and components 8006.15
	Verify repair of hydrostatic transmissions and components 8006.16	Diagnose and troubleshoot powershift /hydrostatic transmission electrical, electronic and computer controlled components 8006.17	Repair powershift/ hydrostatic transmission electrical, electronic and computer controlled components 8006.18	Verify repair of powershift / hydrostatic transmission electrical, electronic and computer controlled components 8006.19	

DRIVE SHAFTS, DRIVE AXLE ASSEMBLIES AND FINAL DRIVES **U8007.0**	Perform visual inspection, identifying systems type and applications 8007.01	Diagnose and troubleshoot drive shafts, drive axle assemblies, final drives and components 8007.02	Repair drive shafts, drive axle assemblies, final drives and components 8007.03	Verify repair of drive shafts, drive axle assemblies, final drives and components 8007.04	
STEERING SYSTEMS **U8008.0**	Perform visual inspection, identifying systems type and applications 8008.01	Diagnose and troubleshoot steering systems and components 8008.02	Repair steering systems and components 8008.03	Verify repair of steering systems and components 8008.04	Diagnose and troubleshoot steering clutches/brakes and components 8008.05
	Repair steering clutches/brakes and components 8008.06	Verify the repair of steering clutches/brakes and components 8008.07			
BRAKING SYSTEMS **U8009.0**	Perform visual inspection, identifying systems type and applications 8009.01	Diagnose and troubleshoot mechanical/hydraulic braking systems and components 8009.02	Repair mechanical/ hydraulic braking systems and components 8009.03	Verify repair of mechanical/ hydraulic braking systems and components 8009.04	Diagnose and troubleshoot air braking systems and components 8009.05
	Repair air braking systems and components 8009.06	Verify repair of air braking systems and components 8009.07			
SUSPENSION SYSTEMS **U8010.0**	Perform visual inspection, identifying systems type and applications 8010.01	Diagnose and troubleshoot suspension systems and components 8010.02	Repair suspension systems and components 8010.03	Verify repair of suspension systems and components 8010.04	
CLIMATE CONTROL SYSTEMS **U8011.0**	Perform visual inspection, identifying systems type and components 8011.01	Diagnose and troubleshoot climate control systems and components 8011.02	Repair climate control systems and components 8011.03	Verify repair of climate control systems and components 8011.04	

STRUCTURAL COMPONENTS AND ACCESSORIES **U8012.0**	Perform visual inspection, identifying systems type and components 8012.01	Diagnose and troubleshoot structural components and accessories 8012.02	Repair structural components and accessories 8012.03	Verify repair of structural components and accessories 8012.04	
TIRES, WHEELS, FRAMES AND UNDERCARRIAGES **U8013.0**	Perform visual inspection, identifying systems type and components 8013.01	Diagnose and troubleshoot tires, wheels and components 8013.02	Install, remove or replace wheel assemblies and components 8013.03	Verify installation, removal or replacement of wheel assemblies and components 8013.04	Diagnose and troubleshoot undercarriages and components 8013.05
	Repair undercarriages and components 8013.06	Verify repair of undercarriages and components 8013.07			
GROUND ENGAGING EQUIPMENT AND ATTACHMENTS **U8014.0**	Perform visual inspection, identifying systems type and applications 8014.01	Diagnose and troubleshoot ground engaging equipment, attachments and components 8014.02	Repair ground engaging equipment, attachments and components 8014.03	Verify repair of ground engaging equipment, attachments and components 8014.04	

U8000.0 OCCUPATIONAL HEALTH AND SAFETY PROCEDURES

GENERAL PERFORMANCE OBJECTIVE

Comply with occupational health and safety procedures, by: identifying and taking corrective action against potential workplace health and safety hazards; handling, storing and disposing of hazardous workplace materials; wearing and maintaining personal protective equipment; complying with workplace-related legislation; interpreting and applying service-related information; practising good housekeeping in the workplace; complying with Workplace Hazardous Materials Information System (WHMIS) guidelines; according to the *Occupational Health and Safety Act, Mining Act, Environmental Protection Act,* government regulations, company policy, and manufacturer's recommendations.

SKILLS

8000.01 Identify and take corrective action against 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, manufacturers' specifications and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

◊ **A trainer can be a journeyperson, a supervisor or the competent employee designated by the apprentice's Sponsor, but not the trade school instructor.**

8000.02 Handle, store and dispose of hazardous workplace materials, including: solvents, new and used lubricants and fluids, brake dust, battery acid, refrigerants and gases; using personal protective equipment and specified handling and storage equipment so that individuals are protected from injury and the environment from contamination; according to government regulations, manufacturer's specifications, and company policy.

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8000.03 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.

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8000.04 Comply with workplace-related legislation, relating to highway traffic safety, parts, warranties, occupational health/safety, environmental protection, business and trade practices, including: Occupational Health and Safety Act, Motive Vehicle Repair Act, Highway Traffic Act, Mining Act and the Environmental Protection Act; by identifying the personal and legal liabilities of technicians and vehicle owners, when performing and/or conducting vehicle safety inspections, emissions tests, work estimates and repairing and/or replacing defective parts; according to government regulations.

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8000.05 Interpret and apply service-related information, including: service bulletins, manuals and parts catalogues, by locating and identifying Product Identification Number (PIN), accessing computerized and data service information systems; so that service/repair is performed; according to manufacturer's recommendations, and company policy.

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8000.06 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 work area is free of obstructions and safely using, and storing tools and shop equipment; to minimize accident or injury to self and others; according to government regulations, and company policy.

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8000.07 Comply with Workplace Hazardous Materials Information System (WHMIS) guidelines, including: reading and interpreting labels and Material Safety Data Sheets (MSDS); ensuring receipt of training in WHMIS regulations and practices; according to the Occupational Health and Safety Act.

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SPONSOR CONFIRMATION FOR U8000: OCCUPATIONAL HEALTH AND SAFETY PROCEDURES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8001.0 ENGINE SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8001.01 Perform a visual inspection, identifying systems type and applications, by: checking for worn, loose, damaged, missing, contaminated or defective components and leakage; including radiators and reservoirs, pressure caps, shutters and controls, filters, cylinder heads, surge/recovery tanks, fluids, lubricants, fan drive mechanisms, pumps, controls and actuators, springs, engine blocks, belts, pulleys, lines, hoses, fittings, heat exchangers, gaskets, o-rings, oil pans, seals, pipes, valves, temperature control devices, drive mechanisms, circuit protection devices, relays, sensors, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8001.02 Diagnose and troubleshoot cooling systems and components, including: radiators and reservoirs, pressure caps, shutters and controls, surge/recovery tanks, coolant, lubricants, fan drive mechanisms, coolant pumps, controls and actuators, belts, lines, hoses, fittings, heat exchangers, gaskets, o-rings, seals, pipes, valves, temperature control devices, drive mechanisms, circuit protection devices, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, lubrication, leaks, odour, temperature, distortion, corrosion, contamination, colour, vibration/noise, coolant type and level; using hand, power, specialized, precision and electronic service tools, and coolant analysis kit; according to manufacturer's recommendations, specifications, and safety requirements.

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8001.03 Repair cooling systems and components, including radiators and reservoirs, pressure caps, shutters and controls, surge/recovery tanks, coolant, lubricants, fan drive mechanisms, coolant pumps, controls and actuators, belts, lines, hoses, fittings, heat exchangers, gaskets, o-rings, seals, pipes, valves, temperature control devices, drive mechanisms, circuit protection devices, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, re-conditioning, exchanging or replacing; 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)
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8001.04 Verify repair of cooling systems and components, including: radiators and reservoirs, pressure caps, shutters and controls, surge/recovery tanks, coolant, lubricants, fan drive mechanisms, coolant pumps, controls and actuators, belts, lines, hoses, fittings, heat exchangers, gaskets, o-rings, seals, pipes, valves, temperature control devices, drive mechanisms, circuit protection devices, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized, precision and electronic service tools, coolant analysis kit, 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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8001.05 Diagnose and troubleshoot engine lubricating systems and components, including: pumps, filters and housings, lines, hoses, fittings, seals, oil, lubrication jets, gaskets, o-rings, heat exchangers, bypass valves and auxiliary devices, actuators, monitoring devices, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wiring, lines and hoses, crankcase pressure, leaks, odour, temperature, distortion, corrosion, contamination, fractures, colour, vibration/noise, oil pressure and level; using 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)
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8001.06 Repair engine lubricating systems and components, including: pumps, filters and housings, lines, hoses, fittings, seals, oil, lubrication jets, gaskets, o-rings, heat exchangers, bypass valves and auxiliary devices, actuators, monitoring devices, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, re-conditioning, exchanging or replacing; 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)
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8001.07 Verify repair of engine lubricating systems and components, including: pumps, filters and housings, lines, hoses, fittings, seals, oil, lubrication jets, gaskets, o- rings, heat exchangers, bypass valves and auxiliary devices, actuators, monitoring devices, sensors, modules, wiring harnesses, fasteners 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)
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8001.08 Diagnose and troubleshoot cylinder heads and components, including: cylinder heads, seats, guides, seals, gasket assemblies, fluids, springs, retainers, rotators, valves, actuating mechanisms, engine brake assemblies, connectors, warning devices, camshafts, drive mechanisms, injector tubes, expansion plugs, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, pressure-testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, corrosion, erosion, distortion, temperature, vibration/noise, carbon build-up, leaks, and cracks; 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)
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8001.09 Repair cylinder heads and components, including: cylinder heads, seats, guides, seals, gasket assemblies, fluids, springs, retainers, rotators, valves, actuating mechanisms, engine brake assemblies, connectors, warning devices, camshafts, drive mechanisms, injector tubes, expansion plugs, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, re-conditioning, exchanging or replacing; 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 (Signature)	College of Trades ID

8001.10 Verify repair of cylinder heads and components, including: cylinder heads, seats, guides, seals, gasket assemblies, fluids, springs, retainers, rotators, valves, actuating mechanisms, engine brake assemblies, connectors, warning devices, camshafts, drive mechanisms, injector tubes, expansion plugs, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, pressure-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)
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8001.11 Diagnose and troubleshoot engine blocks and components, including: cylinder blocks, liners, piston assemblies, connecting rods, bearings, seals, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, expansion plugs, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, temperature, pressure, corrosion, distortion, erosion, fractures, vibration/noise, carbon build-up, and leaks; 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)
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8001.12 Repair engine blocks and components, including: cylinder block, liners, piston assemblies, connecting rods, bearings, seals, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, expansion plugs, fasteners and mounting devices; by servicing, re-conditioning, exchanging or replacing; 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)
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8001.13 Verify repair of engine blocks and components, including: cylinder block, liners, piston assemblies, connecting rods, bearings, seals, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, expansion plugs, fasteners 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 (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8001: ENGINE SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8002.0 FUEL SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair fuel systems, by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of fuel subsystems and components; performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of mechanical controlled fuel systems and components; electronic controlled fuel management systems and components; performing mechanical and electronic controlled engine tune-ups; according to manufacturer's recommendations, specifications, and safety requirements.

SKILLS

8002.01 Perform visual inspection, identifying fuel subsystem type and applications, by: checking for worn, loose, damaged, missing or defective components; including fuel, tanks, heaters, coolers, valves, supply and return lines, hoses, fittings, vents, filters, separators, pumps, actuators, warning devices, systems monitoring devices panels, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8002.02 Diagnose and troubleshoot fuel subsystem types and components, including: fuel, tanks, vents, coolers, valves, filters, separators, heaters, supply and return lines, hoses, fittings, pumps, actuators, warning devices, systems monitoring devices, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, and function checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, odour, temperature, corrosion, colour, contamination, distortion, vibration/noise, pressure, fractures, and leaks; using 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)
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8002.03 Repair fuel subsystem and components, including: tanks, vents, coolers, valves, filters, separators, heaters, supply and return lines, hoses, fittings, pumps, actuators, warning devices, systems monitoring devices, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, replacing, or using 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 (Signature)	College of Trades ID

8002.04 Verify repair of fuel subsystem and components, including: fuel, tanks, vents, coolers, valves, filters, separators, heaters, supply and return lines, hoses, fittings, pumps, actuators, warning devices, systems monitoring devices, , solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using 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 (Signature)	College of Trades ID

8002.05 Perform a visual inspection of mechanical controlled fuel systems and components, including: fuel, high pressure lines, fittings, vents, filters, separators, heaters, valves, pumps, mechanical linkages, governors, aneroid/air fuel ratio valve, cables, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, odour, contamination, distortion, corrosion, temperature, exhaust colour, fractures, vibration/noise, and fuel condition; using pressure and vacuum 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 (Signature)	College of Trades ID

8002.06 Diagnose and troubleshoot mechanical controlled fuel systems and components, including: fuel, high pressure lines, hoses, fittings, vents, filters, separators, heaters, coolers, valves, pumps, mechanical linkages, governors, aneroid/air-fuel ratio valve, cables, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, odour, contamination, distortion, corrosion, temperature, exhaust colour, fractures, vibration/noise, routing of lines and hoses, and fuel condition; using pressure and vacuum 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)
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8002.07 Repair mechanical controlled fuel systems and components, including: high pressure lines, fittings, valves, pumps, mechanical linkages, governors, aneroid/air-fuel ratio valve, cables, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, or replacing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8002.08 Verify repair of mechanical controlled fuel systems and components, including: high pressure lines, fittings, valves, pumps, mechanical linkages, governors, aneroid/air-fuel ratio valve, emission controls, cables, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analyzing performance and function; using pressure and vacuum gauges, hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8002.09 Perform mechanical controlled engine tune-ups, by: visually inspecting fuel; checking compression and crankcase pressure; checking, adjusting and/or replacing fuel and air filters, intake system, exhaust systems, manifold boost pressure and controls, valves, injection pump timing, set-up governors; checking system pressure and leaks; testing injectors, injection pumps, primary fuel supply systems, starting aids and emission control devices; using hand, power, specialized, precision and electronic service tools and manometers; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8002.10 Perform a visual inspection of electronic controlled fuel management systems and components, including: electronic control modules (ECM), systems monitoring devices panels, circuit protection devices, data links, sensors, modules, wiring harnesses, valves, manifolds, pumps, high pressure lines, injectors fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; checking for system voltage, opens/shorts/grounds, diagnostic codes, temperature, corrosion, and vibration/noise; using 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 (Signature)	College of Trades ID

8002.11 Diagnose and troubleshoot electronic controlled fuel management systems and components, including: electronic control modules (ECM), systems monitoring devices panels, circuit protection devices, data links, sensors, modules, wiring harnesses, valves, manifolds, pumps, high pressure lines, injectors, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; checking for system voltage, opens/shorts/grounds, diagnostic codes, temperature, corrosion, and vibration/noise; using 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 (Signature)	College of Trades ID

8002.12 Repair electronic controlled fuel management systems and components, including: electronic control modules (ECM), systems monitoring devices panels, circuit protection devices, data links, sensors, modules, wiring harnesses, valves, manifolds, pumps, high pressure lines, injectors, fasteners and mounting devices; by servicing, reconditioning, exchanging, or replacing; using hand, power, specialized, precision and electronic service tools; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8002.13 Verify repair of electronic controlled fuel management systems and components, including: electronic control modules (ECM), systems monitoring devices panels, circuit protection devices, data links, sensors, modules, wiring harnesses, valves, manifolds, pumps, high pressure lines, injectors, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using hand, power, specialized, precision and electronic service tools; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8002.14 Perform electronic controlled engine tune-ups, by: visually inspecting fuel, checking compression and crankcase pressure; checking, adjusting and/or replacing fuel filters, air filter and intake system, exhaust systems, manifold boost pressure, electrical system, modules, valves, electronic unit injectors (EUI), electronic unit pumps (EUP), primary fuel supply systems, starting aids; check system pressure, leaks, injection timing, module parameters, idle speed and emission control devices; using hand, power, specialized, precision and electronic service tools and manometers; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8002: FUEL SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8003.0 INTAKE, EXHAUST AND EMISSION CONTROL SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8003.01 Perform visual inspection, identifying intake and exhaust systems type and applications, by: checking for leaking, worn, loose, missing, damaged, or defective components; including heat shields, exhaust wraps, manifolds, particulate trap systems, wastegates, turbochargers, blowers, drive mechanisms, converters, piping, mufflers, engine brake systems, air filters, coolers, actuators, gaskets, seals, indicators, emission control systems, electronic controls, sensors, modules, wiring harnesses, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.02 Diagnose and troubleshoot intake and exhaust systems and components, including: heat shields, exhaust wraps, manifolds, piping, mufflers, engine brake systems, converters, air filters, coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, odour, noise, pressure, restriction, vibration/noise, distortion, corrosion, fractures, exhaust colour, temperature and leaks; using hand, power, specialized and electronic service tools; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.03 Repair intake and exhaust systems and components, including: heat shields, exhaust wraps, manifolds, piping, mufflers, engine brake systems, converters, air filters, coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized and electronic service tools, heating, cutting and welding equipment, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.04 Verify repair of intake and exhaust systems and components, including: heat shields, exhaust wraps, manifolds, piping, mufflers, engine brake systems, converters, air filters, coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.05 Perform a visual inspection, identifying turbocharger/blower systems and components, by; checking for leaking, worn, loose, missing, damaged or defective components; including: turbochargers, blowers, drive mechanisms, wastegates, piping, lines, fittings, gaskets, seals, oil, manifold boost control devices, sensors, wiring harnesses, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.06 Diagnose and troubleshoot turbocharger/blower systems and components, including: turbochargers, blowers, drive mechanisms, wastegates, piping, lines, fittings, gaskets, seals, oil, manifold boost control devices, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of piping and lines, pressure, restrictions, temperature, distortion, corrosion, contamination, fractures, leaks, lubrication, and noise/vibration; using hand, power, specialized, precision and electronic service tools and gauges; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

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8003.07 Repair turbocharger/blower systems and components, including: turbochargers, blowers, drive mechanisms, wastegates, piping, lines, fittings, gaskets, seals, oil, manifold boost control devices, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools, gauges, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.08 Verify repair of turbocharger/blower systems and components, including: turbochargers, blowers, drive mechanisms, wastegates, piping, lines, fittings, gaskets, seals, oil, manifold boost control devices, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, analysing performance and function; using hand, power, specialized, precision and electronic service tools, gauges, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8003.09 Perform a visual inspection, identifying emission control systems and components, by; checking for leaking, worn, loose, missing, damaged or defective components; including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), turbochargers/blowers, piping, fittings, manifold boost control devices, electronic control module (ECM), converters, scrubbers, oil, sensors, wiring harnesses, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.10 Diagnose and troubleshoot emission control systems and components, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), turbochargers/blowers, piping, fittings, manifold boost control devices, electronic control module (ECM), converters, scrubbers, oil, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; checking for wear, opens/shorts/grounds, diagnostic codes, exhaust gases, smoke colour, pressure, restrictions, temperature, corrosion, fractures, leaks, lubrication, and noise/vibration; using hand, power, specialized, precision and electronic service tools, exhaust gas analyzers and gauges; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8003.11 Repair emission control systems and components, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), turbochargers/ blowers, piping, fittings, manifold boost control devices, electronic control module (ECM), converters, scrubbers, oil, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools, exhaust gas analyzers, gauges, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8003.12 Verify repair of emission control systems and components, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), turbochargers/ blowers, piping, fittings, manifold boost control devices, electronic control module (ECM), particulate trap devices, converters, scrubbers, oil, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using hand, power, specialized, precision and electronic service tools, exhaust gas analyzers, gauges, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, safety requirements, and company policy.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8003: INTAKE, EXHAUST AND EMISSION CONTROL SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8004.0 ELECTRICAL SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair electrical systems, by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of batteries; servicing and boosting/charging batteries; diagnosing and trouble shooting, repairing and verifying the repair of starting systems and components; charging systems and components; electrical/ electronic and computer controlled systems and components; hybrid drives and components; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

SKILLS

8004.01 Perform visual inspection, identifying systems type and applications, by: checking for worn, damaged, missing, corroded, loose, or defective components; including starters, motors, actuators, lighting/illumination, fire suppression systems, security devices, terminal boards/blocks, circuit protection devices, neutral safety devices, regulators, gauges, alternators, drive mechanisms, batteries, cables, connectors, warning devices, solenoids, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8004.02 Diagnose and troubleshoot batteries, by: visually inspecting, testing, and analysing performance and function; checking state of charge, cranking capacity, voltage drop, fluid level, leaks, loose terminals, hold down devices, corrosion, odour, fractures, contamination, and distortion; using specialized, precision and electronic service tools and hydrometers, 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 (Signature)	College of Trades ID

8004.03 Service and boost/charge batteries, including: single and multi-battery group; by, neutralizing leakage , removing, topping up fluid levels, charging and/or replacing; using hand tools, booster cables, chargers, pullers, cleaning tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8004.04 Diagnose and troubleshoot starting systems and components, including: batteries, starting motors and drive mechanisms, cables, connectors, circuit protection devices, neutral (safety) devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, noise/vibration, odour, corrosion, fractures and temperature; using hand, power, Amperage Voltage Resistance (AVR), multi meters, 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 (Signature)	College of Trades ID

8004.05 Repair starting systems and components, including: batteries, starting motors and drive mechanisms, cables, connectors, circuit protection devices, neutral (safety) devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools and power 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 (Signature)	College of Trades ID

8004.06 Verify repair of starting systems and components, including: batteries, starting motors and drive mechanisms, cables, connectors, circuit protection devices, neutral (safety) devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized, precision and electronic service tools and power, Amperage Voltage Resistance (AVR), multi meters, 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 (Signature)	College of Trades ID

8004.07 Diagnose and troubleshoot charging systems and components, including: alternators, drive mechanisms, voltage regulators, warning devices, circuit protection devices, batteries, cables, connectors, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, system voltage and amperage, opens/grounds/shorts, routing of wires, vibration/noise, alignment, odour, corrosion, fractures, and temperature; using hand, power, Amperage Voltage Resistance (AVR), multi meters, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8004.08 Repair charging systems and components, including: alternators, drive mechanisms, voltage regulators, warning devices, circuit protection devices, batteries, cables, connectors, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; 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 (Signature)	College of Trades ID

8004.09 Verify repair of charging systems and components, including: alternators, drive mechanisms, voltage regulators, warning devices, circuit protection devices, batteries, cables, connectors, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, Amperage Voltage Resistance (AVR), multi meters, 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 (Signature)	College of Trades ID

8004.10 Diagnose and troubleshoot electrical /electronic and computer controlled systems and components, including: terminal boards/blocks, display panels, data links, warning devices, lighting/illumination, circuit protection and electrical accessory devices, batteries, cables, connectors, switches, solenoids, relays, sensors, modules /electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance function and programming; checking for wear, opens/shorts/grounds, parasitic losses, diagnostic codes, routing of wires, temperature, corrosion, fractures, distortion, contamination, vibration/noise, and odour; using hand, power, multi-meters, 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 (Signature)	College of Trades ID

8004.11 Repair electrical/electronic and computer controlled systems and components, including: terminal boards/blocks, display panels, data links, warning devices, lighting/illumination, circuit protection and electrical accessory devices, batteries, cables, connectors, switches, solenoids, relays, sensors, modules /electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; by servicing, reprogramming, exchanging, reconditioning or replacing; 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 (Signature)	College of Trades ID

8004.12 Verify repair of electrical/electronic and computer controlled systems and components, including: terminal boards/blocks, display panels, data links, warning devices, lighting/illumination, circuit protection and electrical accessory devices, batteries, cables, connectors, switches, solenoids, relays, sensors, modules / electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using hand, power, Amperage Voltage Resistance (AVR), multi meters, 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 (Signature)	College of Trades ID

8004.13 Diagnose and troubleshoot hybrid drives and components including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming, calibrating; checking for wear, opens/shorts/grounds, parasitic draw, diagnostic codes, routing of wires, temperature, corrosion, distortion, vibration/noise, colour and odour; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications, safety requirements and company policies.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8004.14 Repair hybrid drives and components, including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by reprogramming, calibrating, exchanging, reconditioning or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications, safety requirements and company policies.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8004.15 Verify repair of hybrid drives and components, including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by reprogramming, calibrating, exchanging, reconditioning or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications, safety requirements and company policies.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8004: ELECTRICAL SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8005.0 HYDRAULIC SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair hydraulic systems by: performing an inspection, diagnosing and troubleshooting, repairing and verifying the repair of mechanical / pilot controlled hydraulic systems and components; electronic/computer-controlled hydraulic systems and components; according to manufacturer's recommendations, specifications, and safety requirements.

SKILLS

8005.01 Perform an inspection, identifying mechanical electronic/computer, and pilot operated hydraulic systems type and applications, by: checking for cavitation, aeration and worn, loose, damaged, missing, or defective components; including pumps, valves, fluids, seals, gaskets, gauges, linkages, actuators, motors, cylinders, accumulators, reservoirs, vents, sight glasses, controls, display panels, screens, filters, coolers, pump drive mechanisms, lines, hoses, fittings, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8005.02 Diagnose and troubleshoot mechanical/pilot controlled hydraulic systems and components, including: pumps, valves, actuators, oil, seals, gaskets, gauges, linkages, motors, cylinders, accumulators, reservoirs, sight glasses, display panels, screens, filters, coolers, pump drive mechanisms, lines, hoses, fittings, switches, solenoids, servos, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, leaks, fluid level, odour, colour, distortion, fractures, corrosion, noise/vibration, cavitation, aeration, contamination, pressure, flow and temperature; using hand, power, specialized, precision and electronic service tools, gauges, flow meters, oil analysis kit, temperature sensors, schematics, 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 (Signature)	College of Trades ID

8005.03 Repair mechanical/pilot controlled hydraulic systems and components, including: pumps, valves, actuators, oil, seals, gaskets, gauges, linkages, motors, cylinders, accumulators, reservoirs, sight glasses, display panels, screens, filters, coolers, pump drive mechanisms, lines, hoses, fittings, switches, solenoids, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools, gauges, flow meters, 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 (Signature)	College of Trades ID

8005.04 Verify repair of mechanical/pilot controlled hydraulic systems and components, including: pumps, valves, actuators, oil, seals, gaskets, gauges, linkages, motors, cylinders, accumulators, reservoirs, sight glasses, display panels, screens, filters, coolers, pump drive mechanisms, lines, hoses, fittings, switches, solenoids, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized, precision and electronic service tools, gauges, flow meters, temperature sensors; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8005.05 Diagnose and troubleshoot electronic/computer-controlled hydraulic systems and components, including: pumps, valves, oil, seals, gaskets, gauges, actuators, motors, cylinders, accumulators, vents, reservoirs and controls, display panels, screens, filters, coolers, pump drive mechanisms, lines, hoses, fittings, data links, warning lights, switches, solenoids, servos, relays, sensors, modules/electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; checking for wear, opens/shorts/grounds, diagnostic codes, routing of wires, lines and hoses, fluid level, leaks, odour, colour, distortion, fractures, corrosion, noise/vibration, cavitation, aeration, contamination, pressure, flow, and temperature; using hand, power, specialized, precision and electronic service tools, gauges, flow meters, oil analysis kit, temperature sensors, schematics, 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 (Signature)	College of Trades ID

8005.06 Repair electronic/computer controlled hydraulic systems and components, including: pumps, valves, oil, seals, gaskets, gauges, actuators, accumulators, vents, reservoirs and controls, display panels, filters, coolers, pump drive mechanisms, lines, hoses, fittings, data links, warning lights, switches, solenoids, servos, relays, sensors, modules/electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; by servicing, reprogramming, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools, flow meters, temperature sensors, schematics, 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 (Signature)	College of Trades ID

8005.07 Verify repair of electronic/computer controlled hydraulic systems and components, including: pumps, valves, oil, seals, gaskets, gauges, actuators, , accumulators, vents, reservoirs and controls, display panels, filters, coolers, pump drive mechanisms, lines, hoses, fittings, data links, warning lights, switches, solenoids, servos, relays, sensors, modules/electronic control modules (ECM), wiring harnesses, fasteners and mounting devices;

by visually inspecting, testing, and analysing performance, function and programming; using hand, power, specialized, precision and electronic service tools, flow meters, temperature sensors; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8005: HYDRAULIC SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8006.0 HYDROSTATIC AND TRANSMISSION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair hydrostatic and transmission systems by: performing an inspection; diagnosing and troubleshooting, repairing and verifying the repair of clutch systems and components; manual transmissions/transfer cases and components; torque converters, lock-up clutches and components; power shift transmissions and components; hydrostatic transmissions and components; power shift and hydrostatic transmission electrical, electronic and computer controlled and components; according to manufacturer’s recommendations, specifications, and safety requirements.

SKILLS

8006.01 Perform inspection, identifying hydrostatic and transmission system types and applications, by: checking for worn, loose, damaged, missing, or defective components; including housings, reservoirs, clutches, discs, pressure plates, flywheels, torque converters, hydraulic retarders, transmissions, shafts, bearings, linkages, seals, gaskets, valves, gauges, cables, lines, hoses, fittings, linkages, controls and actuators, transfer cases, fluids, coolers, power take-off units (PTO), pumps, filters, level indicators, tubes, systems monitoring devices panels, sensors, modules/electronic control modules (ECM), wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.02 Diagnose and troubleshoot clutch systems and components, including: housings, reservoirs, hydraulic cylinders, clutch discs and plates, flywheel assemblies, release mechanisms, pilot/release bearings, input (pilot) shafts, drive mechanisms, cables, linkages, lines, hoses, fittings, fluids, switches, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of lines and hoses, odour, corrosion, contamination, vibration/noise, colour, fluid level, leaks, free play, alignment, internal adjustments, slippage, disengagement and dragging; using hand, power, specialized and precision tools; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.03 Repair clutch systems and components, including: housings, reservoirs, hydraulic cylinders, clutch discs and plates, flywheel assemblies, release mechanisms, pilot/release bearings, input (pilot) shafts, drive mechanisms, cables, linkages, lines, hoses, fluids, switches, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized and precision 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 (Signature)	College of Trades ID

8006.04 Verify repair of clutch systems and components, including: housings, reservoirs, hydraulic cylinders, clutch discs and plates, flywheel assemblies, release mechanisms, pilot/release bearings, input (pilot) shafts, drive mechanisms, cables, linkages, lines, hoses, fluids, switches, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized and precision tools; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.05 Diagnose and troubleshoot manual transmissions/transfer cases and components, including: housings, gears, shafts, synchronizers, shift mechanisms and linkages, power take-off (PTO) units, bearings, thrust washers, seals, gaskets, fluids, lubrication systems, filters, switches, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, odour, colour, oil levels, leaks, contamination, temperature, corrosion, distortion, fractures, vibration/noise, alignment, gear backlash, and tolerances; using hand, power, specialized 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 (Signature)	College of Trades ID

8006.06 Repair manual transmissions/transfer cases and components, including: housings, gears, shafts, synchronizers, shift mechanisms and linkages, power take- off (PTO) units, bearings, thrust washers, seals, gaskets, fluids, lubrication systems, filters, switches, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized 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 (Signature)	College of Trades ID

8006.07 Verify repair of manual transmissions/transfer cases and components, including: housings, gears, shafts, synchronizers, shift mechanisms and linkages, power take-off (PTO) units, bearings, thrust washers, seals, gaskets, fluids, lubrication systems, filters, switches, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized 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 (Signature)	College of Trades ID

8006.08 Diagnose and troubleshoot torque converters, lock-up clutches and components, including: housings, pumps, impellers, turbines, fixed/ overrunning stators, shafts, bearings, actuators, discs, plates, thrust washers, fluids, seals, valves, lines, hoses, fittings, coolers, filters, flywheel, drive mechanisms, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, aeration, cavitation, opens/shorts/grounds, routing of wires, lines and hoses, fluid levels, colour and odour, leaks, contamination, temperature, distortion, vibration/noise, and alignment; using hand, power, specialized, precision and electronic service tools, gauges, flow devices, oil analysis kit; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.09 Repair torque converters, lock-up clutches and components, including: housings, pumps, impellers, turbines, fixed/ overrunning stators, shafts, bearings, actuators, discs, plates, thrust washers, fluids, seals, valves, lines, hoses, fittings, coolers, filters, flywheel, drive mechanisms, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools, gauges, flow devices, 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 (Signature)	College of Trades ID

8006.10 Verify repair of torque converters, lock-up clutches and components, including: housings, pumps, impellers, turbines, fixed/overrunning stators, shafts, bearings, actuators, discs, plates, thrust washers, fluids, seals, valves, lines, hoses, fittings, coolers, filters, flywheel, drive mechanisms, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance; using hand, power, specialized, precision and electronic service tools, gauges, flow devices; according to manufacturer's recommendations, specifications, and safety requirements.

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8006.11 Diagnose and troubleshoot powershift transmissions and components, including: housings, shafts, clutch packs, springs, gears, planetary gear sets, overrunning clutches, valves, valve bodies, shift mechanisms, linkages, actuators, power take-off (PTO) units, bearings, thrust washers, seals, filters, pumps, lines, hoses, fittings, fluids, lubrication systems, coolers, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, aeration, cavitation, opens/shorts/grounds, routing of wires, lines and hoses, fluid levels and colour, leaks, temperature, odour, corrosion, distortion, contamination, fractures, and vibration/noise; using hand, power, specialized, precision and electronic service tools, gauges, flow devices, oil analysis kit; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.12 Repair powershift transmissions and components, including: housings, shafts, clutch packs, springs, gears, planetary gear sets, overrunning clutches, valves, valve bodies, shift mechanisms, linkages, actuators, power take-off (PTO) units, bearings, thrust washers, seals, filters, pumps, lines, hoses, fittings, fluids, lubrication systems, coolers, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, or replacing; using hand, power, specialized, precision and electronic service tools, gauges, flow devices, 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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8006.13 Verify repair of powershift transmissions and components, including: housings, shafts, clutch packs, springs, gears, planetary gear sets, overrunning clutches, valves, valve bodies, shift mechanisms, linkages, actuators, power take- off (PTO) units, bearings, thrust washers, seals, filters, pumps, lines, hoses, fittings, fluids, lubrication systems, coolers, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized, precision and electronic service tools, gauges, flow devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8006.14 Diagnose and troubleshoot hydrostatic transmissions and components, including: housings, pumps, motors, gears, bearings, seals, coolers, control valves, check and by-pass valves, servos, filters, lines, hoses, fittings, reservoirs, fluids, vents, linkages, actuators, warning devices, connectors, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, fluid levels, odour, discolouration, temperature, vibration/noise, corrosion, distortion, fractures, flow, leaks, contamination, and pressure; using gauges, flow meters, hand, power, multimeters, specialized, precision and electronic service tools, oil analysis kit; according to manufacturer’s recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
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8006.15 Repair hydrostatic transmissions and components, including: housings, pumps, motors, gears, bearings, seals, coolers, control valves, check and by-pass valves, servos, filters, lines, hoses, fittings, reservoirs, fluids, vents, linkages, actuators, warning devices, connectors, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, or replacing; using gauges, flow meters, hand, power, multimeters, 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 (Signature)	College of Trades ID

8006.16 Verify repair of hydrostatic transmissions and components, including: housings, pumps, motors, gears, bearings, seals, coolers, control valves, check and by-pass valves, servos, filters, lines, hoses, fittings, reservoirs, fluids, vents, linkages, actuators, warning devices, connectors, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using gauges, flow meters, hand, power, multimeters, 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 (Signature)	College of Trades ID

8006.17 Diagnose and troubleshoot powershift and hydrostatic transmission electrical, electronic and computer controlled components, including: warning devices, controls and actuators, control modules / electronic control modules (ECM), systems monitoring devices, interface and data links, switches, solenoids, servos, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function, and programming; checking for wear, diagnostic codes, opens/shorts/grounds, routing of wires, parameters, system voltage, amperage, resistance, temperature, discolouration of wires and components, vibration/noise, and corrosion/oxidation; using hand, power, multimeters, 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 (Signature)	College of Trades ID

8006.18 Repair powershift and hydrostatic transmission electrical, electronic and computer controlled components, including: warning devices, controls and actuators, control modules/electronic control modules (ECM), systems monitoring devices, interface and data links, switches, solenoids, servos, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reprogramming, reconditioning, exchanging or replacing; using hand, power, multimeters, 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 (Signature)	College of Trades ID

8006.19 Verify repair of powershift and hydrostatic transmission electrical, electronic and computer controlled components, including: warning devices, controls and actuators, control modules/electronic control modules (ECM), systems monitoring devices, interface and data links, switches, solenoids, servos, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using hand, power, multimeters, 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 (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8006: HYDROSTATIC AND TRANSMISSION SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8007.0 DRIVE SHAFTS, DRIVE AXLE ASSEMBLIES AND FINAL DRIVES

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8007.01 Perform visual inspection, identifying systems type and applications, by: checking for worn, loose, damaged, missing, or defective components; including drive shafts, universal joint assemblies, hanger bearings, flanges, yokes, housings, vents, lines, hoses, fittings, carriers, axle shafts, gears, planetary gear sets, crown and pinion sets, differential gears, inter-axle differentials, traction control components, bearings, gaskets, seals, wheel end assemblies, lubrication systems, controls, actuators, sensors, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8007.02 Diagnose and troubleshoot drive shafts, drive axle assemblies, final drives and components, including: drive shafts, universal joint assemblies, hanger bearings, flanges, yokes, carrier assemblies, axle shafts, housings, vents, lines, hoses, fittings, gears, planetary gear sets, crown and pinion sets, locking and limited slip components, differential gears, inter-axle differentials, traction control components, bearings, gaskets, seals, lubricants, oil cooling and circulating components, thrust washers, actuators, wheel end assemblies, chain drives, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, wear patterns, routing of lines and hoses, temperature, discolouration, oil contamination and level, tolerances, vibration/noise, runout, drive line angles, phasing, distortion, corrosion, and fractures; using hand, power and specialized tools, oil analysis kit, 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 (Signature)	College of Trades ID

8007.03 Repair drive shafts, drive axle assemblies, final drives and components, including: drive shafts, universal joint assemblies, hanger bearings, flanges, yokes, carrier assemblies, axle shafts, housings, vents, lines, hoses, fittings, gears, planetary gear sets, crown and pinion sets, locking and limited slip components, differential gears, inter-axle differentials, traction control components, bearings, gaskets, seals, lubricants, oil cooling and circulating components, thrust washers, actuators, wheel end assemblies, chain drives, fasteners and mounting devices; by servicing, reconditioning, exchanging, replacing or adjusting; using hand, power and specialized tools, heating, cutting and welding 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 (Signature)	College of Trades ID

8007.04 Verify repair of drive shafts, drive axle assemblies, final drives and components, including: drive shafts, universal joint assemblies, hanger bearings, flanges, yokes, carrier assemblies, axle shafts, housings, vents, lines, hoses, fittings, gears, planetary gear sets, crown and pinion sets, locking and limited slip components, differential gears, inter-axle differentials, traction control components, bearings, gaskets, seals, lubricants, oil cooling and circulating components, thrust washers, actuators, wheel end assemblies, chain drives fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power and specialized 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 (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8007: DRIVE SHAFTS, DRIVE AXLE ASSEMBLIES AND FINAL DRIVES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8008.0 STEERING SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8008.01 Perform inspection, identifying systems type and applications, by: checking for leaks, worn, loose, damaged, or defective components; including articulating joints, pumps, valves and drive mechanisms, actuators, tie rod ends, wheel steer components, accumulators, differential steering system components, columns, mechanical stops, release mechanisms, gear trains, discs, plates, bands, reservoirs, filters, linkages, housings, gauges, lines, hoses, fittings, fluids, lubricants, seals, pins, bushings, bearings, switches, connectors, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.02 Diagnose and troubleshoot steering systems and components, including: articulating joints, pumps, valves and drive mechanisms, actuators, tie rod ends, wheel steer components, reservoirs, filters, linkages, lines, hoses, fittings, gauges, housings, fluids, lubricants, columns, mechanical stops, , pins, bushings, bearings, accumulators, differential steering system components, switches, solenoids, servos, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of lines and hoses, temperature, lubrication, fluid level, leaks, contamination, cavitation, aeration, pressure, flow, colour, tolerances, vibration/noise, alignment, corrosion, distortion, and fractures; using hand, power, multimeters, specialized, precision and electronic service tools, gauges, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.03 Repair steering systems and components, including: articulating joints, pumps, valves and drive mechanisms, actuators, tie rod ends, wheel steer components, reservoirs, filters, linkages, lines, hoses, fittings, gauges, housings, fluids, lubricants, columns, mechanical stops, pins, bushings, bearings, accumulators, differential steering system components, switches, solenoids, servos, wiring harnesses, fasteners and mounting devices; by servicing, reprogramming, reconditioning, exchanging or replacing and aligning; using hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.04 Verify repair of steering systems and components, including: articulating joints, pumps, valves and drive mechanisms, actuators, tie rod ends, wheel steer components, reservoirs, filters, linkages, lines, hoses, fittings, gauges, housings, fluids, lubricants, columns, mechanical stops, pins, bushings, bearings, accumulators, differential steering system components, switches, solenoids, servos, wiring harnesses, fasteners 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 government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.05 Diagnose and troubleshoot steering clutches/brakes and components, including: differential steering assemblies, discs, plates, bands, release mechanisms, bearings, seals, shafts, gear trains, drive mechanisms, reservoirs, linkages, lines, hoses, fittings, housings, fluids, lubricants, switches, connectors, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/short/grounds, routing of wires, lines and hoses, odour, temperature, corrosion, distortion, fractures, contamination, vibration/noise, discolouration, fluid level, leaks, pressure, free play, alignment, internal adjustments, slippage, disengagement and dragging; using hand, power, multimeter, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.06 Repair steering clutches/brakes and components, including: differential steering assemblies, discs, plates, bands, release mechanisms, bearings, seals, shafts, gear trains, drive mechanisms, reservoirs, linkages, lines, hoses, fittings, housings, fluids, lubricants, switches, connectors, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, adjusting or replacing; using hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8008.07 Verify repair of steering clutches/brakes and components, including: differential steering assemblies, discs, plates, bands, release mechanisms, bearings, seals, shafts, gear trains, drive mechanisms, reservoirs, linkages, lines, hoses, fittings, housings, fluids, lubricants, switches, connectors, solenoids, relays, sensors, wiring harnesses, fasteners 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 government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8008: STEERING SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8009.0 BRAKING SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair braking systems by: performing a visual inspection; diagnosing and troubleshooting, repairing and verifying the repair of mechanical/hydraulic braking systems and components; air braking systems and components; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

SKILLS

8009.01 Perform visual inspection, identifying systems type and applications, by: checking for leaks, worn, loose, damaged, defective, or missing components; including reservoirs, drums, friction materials, cables, master cylinders, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, dust shields, spiders, S-cams and shafts, bushings, slack adjusters, actuators and boosters (air and hydraulic), warning devices, lines, hoses, fittings, accumulators, fluids, lubricants, reservoirs, switches, solenoids, relays, sensors, modules, wiring harnesses, pumps, filters, coolers, valves, spring applied-hydraulic release (SAHR) brake system and components, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.02 Diagnose and troubleshoot mechanical/hydraulic braking systems and components, including: drums, friction materials, cables, master cylinders, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, dust shields, lines, hoses, fittings, accumulators, fluids, lubricants, reservoirs, actuators and boosters (air and hydraulic), switches, relays, sensors, modules, warning devices, wiring harnesses, pumps, filters, coolers, valves, spring applied-hydraulic release (SAHR) brake system and components fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, temperature, lubrication, fluid level, contamination, leaks, pressure, flow, cavitation, aeration, discolouration, tolerances, vibration/noise, runout, corrosion, fractures, and distortion; using hand, power, flow meters, gauges, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.03 Repair mechanical/hydraulic braking systems and components, including: drums, friction materials, cables, master cylinders, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, dust shields, lines, hoses, fittings, accumulators, fluids, lubricants, reservoirs, actuators and boosters (air and hydraulic), switches, relays, sensors, modules, warning devices, wiring harnesses, pumps, filters, coolers, valves, spring applied-hydraulic release (SAHR) brake system and components fasteners and mounting devices; by servicing, reconditioning, exchanging, adjusting or replacing; using hand, power, flow meters, gauges, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.04 Verify repair of mechanical/hydraulic braking systems and components, including: drums, friction materials, cables, master cylinders, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, dust shields, lines, hoses, fittings, accumulators, fluids, lubricants, reservoirs, actuators and boosters (air and hydraulic), switches, relays, sensors, modules, warning devices, wiring harnesses, pumps, filters, coolers, valves, spring applied-hydraulic release (SAHR) brake system and components fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, flow meters, gauges, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.05 Diagnose and troubleshoot air braking systems and components, including: compressors, air dryer components, reservoirs, drains, governors, gauges, drums, calipers, rotors, backing plates, dust shields, spiders, friction materials, lines, hoses, fittings, S-cams and shafts, bushings, slack adjusters, valves, actuators, warning devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, pressure, corrosion, distortion, fractures, odour, discolouration, leaks, noise/vibration, contamination and temperature; using hand, power, gauges, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.06 Repair air braking systems and components, including: compressors, air dryer components, reservoirs, drains, governors, gauges, drums, calipers, rotors, backing plates, dust shields, spiders, friction materials, lines, hoses, fittings, S- cams and shafts, bushings, slack adjusters, valves, actuators, warning devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, exchanging, adjusting or replacing; using hand, power, specialized, precision measuring and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8009.07 Verify repair of air braking systems and components, including: compressors, air dryer components, reservoirs, drains, governors, gauges, drums, calipers, rotors, backing plates, dust shields, spiders, friction materials, lines, hoses, fittings, S-cams and shafts, bushings, slack adjusters, valves, actuators, warning devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, gauges, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8009: BRAKING SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8010.0 SUSPENSION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8010.01 Perform visual inspection, identifying systems type and applications, by: checking for leaks, worn, loose, damaged, missing, or defective components; including shock absorbers, leaf, rubber block, compressed gas suspensions, shackles, hangers, pins, bushings, equalizing beams, accumulators, struts (suspension cylinders), lines, hoses, fittings, lubricants, fluids, gauges, electronic levelling/ride control, valves, data links, warning devices, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8010.02 Diagnose and troubleshoot suspension systems and components, including: rubber block, compressed gas suspensions, shackles, hangers, pins, bushings, equalizing beams, accumulators, struts (suspension cylinders), lines, hoses, fittings, lubricants, fluids, gauges, electronic levelling/ride control, valves, data links, warning devices, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function, and programming; checking for wear opens/shorts/grounds, diagnostic codes, routing of wires, lines and hoses, lubrication, contamination, fluid levels, leaks, pressure, discolouration, vibration/noise, alignment, tolerances, fractures, corrosion, erosion 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 (Signature)	College of Trades ID

8010.03 Repair suspension systems and components, including: rubber block, compressed gas suspensions, shackles, hangers, pins, bushings, equalizing beams, accumulators, struts (suspension cylinders), actuators, cylinders, lines, hoses, fittings, lubricants, fluids, gauges, electronic levelling/ride control, valves, data links, warning devices, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, recharging, reprogramming, reconditioning, exchanging, aligning, adjusting, or replacing; using hand, power, specialized, precision and electronic service tools, heating cutting and welding 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 (Signature)	College of Trades ID

8010.04 Verify repair of suspension systems and components, including:, rubber block, compressed gas suspensions, shackles, hangers, pins, bushings, equalizing beams, accumulators, struts (suspension cylinders), lines, hoses, fittings, lubricants, fluids, gauges, electronic levelling/ride control, valves, data links, warning devices, switches, solenoids, sensors, modules, wiring harnesses, fasteners 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.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8010: SUSPENSION SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8011.0 CLIMATE CONTROL SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

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

SKILLS

8011.01 Perform visual inspection, identifying systems type and applications, by: checking for worn, loose, damaged, missing, leaking, or defective components, fluid levels and condition; including controls, actuators, cables, drive mechanisms, fans, motors, circulating pumps, receivers/dryers, accumulators, condensers, evaporators, heater core, filters, lines, hoses, fittings, test ports, valves, seals, gaskets, fluids, lubricants, ducting, resistors, warning devices, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8011.02 Diagnose and troubleshoot climate control systems and components, including: controls, actuators, cables, drive mechanisms, receiver/dryers, fans, motors, circulating pumps, filters, condensers , evaporators, heater core, lines, hoses, fittings, test ports, valves, seals, gaskets, fluids, ducting, resistors, warning devices, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, diagnostic codes, odour, fluid levels, colour, distortion, corrosion, temperature, contamination, vibration/noise, pressure, fractures, and leaks; using hand, power, thermometer, specialized, precision and electronic service tools, manifold gauge sets and leak-detection devices, refrigerant recovery and recharging systems, and according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8011.03 Repair climate control systems and components, including: controls, actuators, cables, drive mechanisms, receivers/dryers, fans, motors, circulating pumps, filters, condensers , evaporators, heater core, lines, hoses, fittings, test ports, valves, seals, gaskets, fluids, ducting, resistors, warning devices, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, recharging, reprogramming, reconditioning, exchanging or replacing and evacuating; using hand, power, specialized, precision and electronic service tools, manifold gauge sets and refrigerant recovery and recharging equipment, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8011.04 Verify repair of climate control systems and components, including: controls, actuators, cables, drive mechanisms, receivers/dryers, fans, motors, circulating pumps, filters, condensers , evaporators, heater core, lines, hoses, fittings, test ports, valves, seals, gaskets, fluids, ducting, resistors, warning devices, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing, and analysing performance, function and programming; using hand, power, thermometer, specialized, precision and electronic service tools, manifold gauge sets and leak-detection devices, refrigerant recovery and recharging systems according to government regulations, manufacturer's recommendations, specifications, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8011: CLIMATE CONTROL SYSTEMS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8012.0 STRUCTURAL COMPONENTS AND ACCESSORIES

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair structural components and accessories, by: performing a visual inspection; diagnosing and troubleshooting, repairing and verifying the repair of structural components and accessories; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

SKILLS

8012.01 Perform visual inspection, identifying systems type and components, by: checking for worn, loose, damaged, or missing components; including roll over protection structures (ROPS), falling object protection structures (FOPS), operator protection structures (OPS), cabs, exterior body panels and guarding, doors, hoods, weather-stripping, sound suppression materials, windshield wiper assemblies, mirrors, roof hatches, (secondary exits), interlock switches, lighting assemblies, ramps, rails, ladders, steps, anti-skid materials, handholds, fenders, glass, lenses, lights, housings, mirrors, antennae, interior trim, flooring, panels, roof lining, seats, upholstery, occupant restraints, safety/operational decals, fastening and mounting devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8012.02 Diagnose and troubleshoot structural components and accessories, including: roll over protection structures (ROPS), falling object protection structures (FOPS), operator protection structures (OPS), cabs, exterior body panels and guarding, doors, hoods, weather-stripping, sound suppression materials, windshield wiper assemblies, mirrors, roof hatches, (secondary exits), interlock switches, lighting assemblies, ramps, rails, ladders, steps, anti-skid materials, handholds, fenders, glass, lenses, lights, housings, mirrors, antennae, interior trim, flooring, panels, roof lining, seats, upholstery, occupant restraints, safety/operational decals, fastening and mounting devices; by inspecting, testing, and analysing performance and function; checking for wear, vibration/noise, corrosion, distortion, alignment, fractures and leaks; using hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8012.03 Repair structural components and accessories, including: roll over protection structures (ROPS), falling object protection structures (FOPS), operator protection structures (OPS), cabs, exterior body panels and guarding, doors, hoods, weather-stripping, sound suppression materials, windshield wiper assemblies, mirrors, roof hatches (secondary exits), interlock switches, lighting assemblies, ramps, rails, ladders, steps, anti-skid materials, handholds, fenders, glass, lenses, lights, housings, mirrors, antennae, interior trim, flooring, panels, roof lining, seats, upholstery, occupant restraints, safety/operational decals, fastening and mounting devices; by servicing, reconditioning, exchanging, aligning, adjusting or replacing; using hand, power, specialized, precision and electronic service tools, , and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8012.04 Verify repair of structural components and accessories, including: roll over protection structures (ROPS), falling object protection structures (FOPS), operator protection structures (OPS), cabs, exterior body panels, trim and guarding, doors, hoods, weather-stripping, sound suppression materials, windshield wiper assemblies, mirrors, roof hatches, (secondary exits), interlock switches, lighting assemblies, ramps, rails, ladders, steps, anti-skid materials, handholds, fenders, glass, lenses, lights, housings, mirrors, antennae, interior trim, flooring, panels, roof lining, seats, upholstery, occupant restraints, safety/operational decals, 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 government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8012: STRUCTURAL COMPONENTS AND ACCESSORIES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8013.0 TIRES, WHEELS, FRAMES AND UNDERCARRIAGES

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair, tires, wheels, frames and undercarriages, by: performing a visual inspection; diagnosing and troubleshooting, installing, removing or replacing wheels and components; repairing and verifying the repair of undercarriages and components; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

SKILLS

8013.01 Perform visual inspection, identifying systems type and applications, by: checking for worn, loose, damaged, missing, overheated, or defective components and leaks, including tires, rims, ballasting, hubs, spacers, bearings, pins, bushings, seals, valve stems, lubricants, main/sub frames, idlers, track assemblies, springs, adjusters, rollers, chains, pads, sprockets, guards/guides, pivot shafts, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.02 Diagnose and troubleshoot tires, wheels and components, including: tires, rims, hubs, spacers, bearings, seals, valve stems, lubricants, spacers, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, gap in split ring, tire matching (type/size/wear), and condition, wheel installation, distortion, corrosion, pressure, tire pressure monitoring system and lubrication; using hand, power, specialized and precision tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.03 Install, remove or replace wheel assemblies and components, including: hubs, bearings, seals, spacers, fasteners and mounting devices, by measuring, adjusting, exchanging or replacing; using hand, power, specialized and precision tools, lubricants, safety cages, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.04 Verify installation, removal or replacement of wheel assemblies and components, including: hubs, bearings, seals, spacers, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function, using hand, power, specialized and precision tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.05 Diagnose and troubleshoot undercarriages and components, including: main/sub frames, idlers, track assemblies, pins, bushings, seals, gaskets, lubricants, springs, adjusters, rollers, chains, pads, sprockets, guards/guides, pivot shafts, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, adjustments, track sag, alignment, fractures, distortion, leaks, noise/vibration, and lubrication; using hand, power, specialized and precision tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.06 Repair undercarriages and components, including: main/sub frames, idlers, track assemblies, pins, bushings, seals, gaskets, lubricants, springs, adjusters, rollers, chains, pads, sprockets, guards/guides, pivot shafts, fasteners and mounting devices; by servicing, reconditioning, exchanging, aligning, adjusting, lubricating or replacing; using hand, power, specialized and precision tools, , heating, cutting and welding equipment, hydraulic presses, lifting, rigging and blocking devices and safety cages; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8013.07 Verify repair of undercarriages and components, including: main/sub frames, idlers, track assemblies, pins, bushings, seals, gaskets, lubricants, springs, adjusters, rollers, chains, pads, sprockets, guards/guides, pivot shafts, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, specialized and precision tools, and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8013: PROTECT SELF AND OTHERS TIRES, WHEELS, FRAMES and UNDERCARRIAGES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U8014.0 GROUND ENGAGING EQUIPMENT, ATTACHMENTS AND COMPONENTS

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair ground engaging equipment, attachments and components by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of ground engaging attachments and components; according to manufacturer's recommendations, specifications, company policy, and safety requirements.

SKILLS

8014.01 Perform visual inspection, identifying systems type and applications, by: checking for leaks, worn, loose, damaged, missing, or defective components; including booms, pins, bushings, linkages, ground engaging tools, buckets, cutting edges, tips and adapters, rippers, scrapers, breakers, hydraulic shears, tampers, augers, forestry attachments, dump bodies, tailgate assemblies, coupling devices, pipes, lines, hoses, fittings, lubricants, fluids, fasteners and mounting devices; using hand, power, specialized, precision and electronic service tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8014.02 Diagnose and troubleshoot ground engaging equipment, attachments and components, including: booms, pins, bushings, linkages, buckets , cutting edges, tips and adapters, rippers, scrapers, breakers, hydraulic shears, tampers, augers, forestry attachments, dump bodies, tailgate assemblies, coupling devices, pipes, lines, hoses, fittings, lubricants, fluids, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; checking for wear, routing of lines and hoses, corrosion, distortion, alignment, tolerances, fractures, fluids, lubrication, and leaks; using hand, power, electronic service tools, gauges, flow meters, specialized and precision tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8014.03 Repair ground engaging equipment, attachments and components, including: booms, pins, bushings, linkages, buckets, cutting edges, tips and adapters, rippers, scrapers, breakers, hydraulic shears, tampers, augers, forestry attachments, dump bodies, tailgate assemblies, coupling devices, pipes, lines, hoses, fittings, lubricants, fluids, fasteners and mounting devices; by servicing, reprogramming, calibrating, reconditioning, exchanging, adjusting or replacing; using hand, power, specialized and precision tools, heating, cutting and welding equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

8014.04 Verify repair of ground engaging equipment, attachments and components, including: booms, pins, bushings, linkages, buckets, cutting edges, tips and adapters, rippers, scrapers, breakers, hydraulic shears, tampers, augers, forestry attachments, dump bodies, tailgate assemblies, coupling devices, pipes, lines, hoses, fittings, lubricants, fluids, fasteners and mounting devices; by visually inspecting, testing, and analysing performance and function; using hand, power, electronic service tools, flow meters, gauges, specialized and precision tools, and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications, company policy, and safety requirements.

(mm/dd/yy)	Trainer (Print Name)	◊Trainer (Signature)
(mm/dd/yy)	Apprentice (Signature)	College of Trades ID

SPONSOR CONFIRMATION FOR U8014: GROUND ENGAGING EQUIPMENT, ATTACHMENTS AND COMPONENTS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

DEFINITIONS

Apprentices Class
Individuals in this class:

- Hold one or more valid Registered Training Agreements with the Ministry of Training, Colleges and Universities in either compulsory or voluntary trades;
- Hold a valid statement of membership with the Ontario College of Trades in the Apprenticeship class;
- Are subject to any ratios or wage rates that have been set out in regulation for their trade(s);
- Can remain in this class until they receive their Certificate of Apprenticeship;
- Can hold themselves out as Apprentices.

Certificate of Apprenticeship (C of A)
A certificate issued by the Minister of Training, Colleges and Universities to individuals who have demonstrated that they have completed an apprenticeship program in Ontario.

Certificate of Qualification (C of Q)
A certificate issued by the Registrar on behalf of the College of Trades to a Journeyperson. A Certificate of Qualification will serve as proof of having met any testing/program requirements and membership in the College's Journeypersons Class.

Competence
The ability of an individual to perform a skill repeatedly and without assistance in the workplace as set out in the Log Book.

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.

Competent Person
A competent person is defined by the *Occupational Health and Safety Act* as being a person who:

- Is qualified because of their knowledge, training and experience to organize the work and its performance;
- Is familiar with the *Occupational Health and Safety Act* and its regulations that apply to the work; and has knowledge of any potential or actual danger to health or safety in the workplace.

Competent Worker
A competent worker is defined by the *Occupational Health and Safety Act* as being a person who:

- Is qualified because of knowledge, training and experience to perform the work;
- Is familiar with the *Occupational Health and Safety Act* and with the provisions of the regulations that apply to the work; and
- Has knowledge of all potential or actual danger to health or safety in the work.

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 established by the College of Trades.

Sponsor of Record
Refers to the Sponsor documented as being signatory to the current training agreement or contract. In order for a Sponsor to be considered for the training of Apprentices, they must identify that the workplace has qualified Journeypersons 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.

Incompetence
According to the *Ontario College of Trades and Apprenticeship Act, 2009*, a member of the College of Trades may be found to be incompetent by the College Of Trades Discipline Committee if the Committee feels that the member has displayed a lack of knowledge, skill or disregard for another person's welfare while practising their trade. If this happens, the individual may be found unfit to practise their trade and their Statement of Membership/Certificate of Qualification may be revoked, suspended, or be subject to terms, conditions or limitations.

Journeyperson
Compulsory Trades Journeyperson:

- Someone who holds a valid Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade; or
- Someone who holds a valid Provisional Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade.

Voluntary Trades Journeyperson:

- Someone who holds a valid Certificate of Qualification in the trade and who is a member in good standing of the College of Trades Journeypersons Class for the same trade; or
- Someone who holds a Certificate of Qualification in the trade that was issued by the Ministry of Training, Colleges and Universities prior to April 8, 2013 (membership in the College of Trades is not required in this scenario).

Journeyperson Candidates Class
An individual who has completed an Ontario apprenticeship program (Certificate of Apprenticeship) in a voluntary or compulsory trade that has a Certificate of Qualification examination, but has not passed the Certificate of Qualification examination for their trade. There is a maximum time limit of one year to remain in the Journeyperson Candidates Class. Individuals in this class:

- are subject to any ratios and/or wage rates that have been set out for their trade(s), if they practise a compulsory trade.

- Can continue to work legally in their trade if they are in a compulsory trade, as they prepare to write their examination (individuals in voluntary trades do not have to be members of the College of Trades to work legally); and can hold themselves out as Journeyperson Candidates (they are neither Apprentices nor Journeypersons).

- Can remain in this class for a maximum of one year or until they pass the Certificate of Qualification exam and become members of the Journeypersons class. However, they can only remain in this class for a maximum of one year. After one year they can move into the Tradespersons Class if they are in a voluntary trade. If they are in a compulsory trade and have been in the Journeyperson Candidates Class for one year, they can no longer work legally in that trade until they pass the Certificate of Qualification examination.

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.

OCTAA
Ontario College of Trades and Apprenticeship Act, 2009

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.

Ratios
For up to date information regarding Journeyperson to Apprentice ratios, please visit: www.collegeoftrades.ca

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 successfully completing 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 skill described in the Log Book (note: does not mean the larger skill groups referred to in the Log Book as Skill Sets, Training Units, or General Performance Objectives, but the individual skills that make up those groups).

Skill Sets
Group of individual skills found in the Log Book (may also be called Training Unit or General Performance Objective).

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

Supervisor
An individual who oversees the performance of a task and oversees the actions or work of others.

Trade Board
Under the *Ontario College of Trades and Apprenticeship Act, 2009*, the College of Trades Appointments Council (COTAC) may appoint a Trade Board for each designated trade, composed of Employee and Employer representatives from the industry. Trade Boards are responsible for advising and making recommendations to the College of Trades Divisional Boards on issues relating to their trade. When there is no appointed trade board for a trade, the respective sector Divisional Board will act as the default Trade Board for the trade.

Tradespersons Class
A Class of Membership for individuals who practise in a voluntary trade which may or may not have a Certificate of Qualification examination.

Individuals in this class:
Have been members of the Journeyperson Candidates Class or are not eligible for Journeyperson Candidates Class and have been assessed to have experience and/or qualifications that are equivalent to a Certificate of Apprenticeship in that trade

- Are preparing to write/have no plans to write/have not passed the available Certificate of Qualification exam for their trade(s);
- Can remain in this class indefinitely or until they pass the available Certificate of Qualification exam for their trade(s); and
- Can hold themselves out as tradespersons (they are neither apprentices nor journeypersons).

Note: Individuals in the Tradespersons Class are considered Journeypersons for the purpose of determining ratios for that trade.

Trainer

A qualified Trainer in a compulsory trade is a Journeyperson with a Certificate of Qualification. In a voluntary trade, a Trainer is an individual who is considered equivalent to a Journeyperson with a Certificate of Qualification. A trainer can be a journeyperson, a supervisor or the competent employee designated by the apprentice's Sponsor, but not the trade school instructor.

In this trade a trainer must be competent in the skill, but it is not mandatory to be a member of the College of Trades or have a Certificate of Qualification (CofQ).

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 join the Journeypersons class of members at the Ontario College of Trades 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

You will write an Ontario-only examination when your trade is not designated as Red Seal trade in Ontario.

Ontario's Exam Preparation Guide
collegeoftrades.ca

Basic Examination Details for You to Know
You will have **up to four hours to write your examination.** If you need more time, you must ask for it when you schedule the examination, not on the day of your examination. You can leave the examination centre if you complete the examination in less than four hours.
You need a mark of 70% to pass.

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.

Scheduling Your Examination
The examination scheduling process is currently outlined in detail on the College of Trades website: collegeoftrades.ca

Remember these 3 basic steps:

1. Confirm your eligibility to write the examination with the College of Trades.
2. Contact Client Services at the College of Trades to pay your examination fee.
3. Contact the local Ministry apprenticeship office to schedule your examination in their examination centre: http://services.findhelp.ca/eo/tcu/appoff

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 Ministry of Training, Colleges and Universities Apprenticeship Office immediately to update your sponsor record.

3. Please make sure you do record all of 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	
Registered Training Agreement #	
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 (e.g. UXXXX)	

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, please photocopy as needed or visit collegeoftrades.ca and search Sponsor Record Form.

CHANGE OF SPONSOR RECORD #2

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
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 (e.g. UXXXX)	

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, please photocopy as needed or visit collegeoftrades.ca and search Sponsor Record Form.

CHANGE OF SPONSOR RECORD #3

SPONSOR INFORMATION	
Apprentice Name	
Registered Training Agreement #	
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 (e.g. UXXXX)	

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, please photocopy as needed or visit collegeoftrades.ca and search Sponsor Record Form.

INSTRUCTIONS FOR APPRENTICESHIP PROGRAM COMPLETION (Appendix A)

Once an Apprentice has completed all the classroom training and on-the-job hours specified for the trade, and has acquired all the mandatory skills included in this Log Book:

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

2. They sign the forms and submit them to their local Ministry of Training, Colleges and Universities apprenticeship office. (To find the closest office, check the contact information at *http://services.findhelp.ca/eo/tcu/appoff or call the Employment Ontario toll free number at (1-800-387-5656).*

3. Since this trade is competency based, all mandatory skills in the training standard must be signed off. If the Sponsor is completing the Apprentice before the industry recommended training hours are done, Ministry 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 Ministry of Training, Colleges and Universities apprenticeship office by mail, fax, or email (as a scanned document), they should not include their Log Book; if they are presenting this form in person at the local apprenticeship office, they should bring their Log Book with them.

After Ministry 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 Ministry will issue a Certificate of Apprenticeship to the Apprentice.

The Ontario College of Trades will receive notification of this completion, and complete the individual's membership in the Apprentices class for the trade. If the Apprentice has completed a program in a compulsory trade, the College of Trades will automatically register the Apprentice as a member of the Journeyperson Candidates class so the Apprentice can continue to work legally for one year while preparing for the certification examination. If an apprentice completes their apprenticeship in a voluntary trade **and** there is no Certificate of Qualification exam, they can apply for membership in the Journeypersons Class at the Ontario College of Trades. If there is a Certificate of Qualification exam, they must write and pass the exam in order to enter the Journeypersons Class at the Ontario College of Trades.

For permission to schedule an exam once completion is confirmed by the Ministry, the individual must first contact the College of Trades Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification examination fee.

APPRENTICE COMPLETION FORM (Appendix B)

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 Ministry of Training, Colleges and Universities apprenticeship office (find contact information at http://services.findhelp.ca/eo/tcu/appoff 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 *(print name)*	
E-mail Address	

PROGRAM INFORMATION			
Trade Name			
Number of hours required as per Training Agreement *(for hours-based trades only)*			
Hours completed? *(documentation attached)*	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

SKILL SET COMPLETION FOR SPONSORS (Appendix C)

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

SKILL SET #	SKILL SET TITLE	SIGNING AUTHORITY SIGNATURE
U8000.0	**OCCUPATIONAL HEALTH AND SAFETY PROCEDURES**	
U8001.0	**ENGINE SYSTEMS**	
U8002.0	**FUEL SYSTEMS**	
U8003.0	**INTAKE, EXHAUST AND EMISSION CONTROL SYSTEMS**	
U8004.0	**ELECTRICAL SYSTEMS**	
U8005.0	**HYDRAULIC SYSTEMS**	
U8006.0	**HYDROSTATIC AND TRANSMISSION SYSTEMS**	
U8007.0	**DRIVE SHAFTS, DRIVE AXLE ASSEMBLIES AND FINAL DRIVES**	
U8008.0	**STEERING SYSTEMS**	
U8009.0	**BRAKING SYSTEMS**	
U8010.0	**SUSPENSION SYSTEMS**	
U8011.0	**CLIMATE CONTROL SYSTEMS**	
U8012.0	**STRUCTURAL COMPONENTS AND ACCESSORIES**	
U8013.0	**TIRES, WHEELS, FRAMES AND UNDERCARRIAGES**	
U8014.0	**GROUND ENGAGING EQUIPMENT AND ATTACHMENTS**	

MINISTRY OF TRAINING, COLLEGES AND UNIVERSITIES USE ONLY:

Sponsor verified as most recent sponsor of record: Yes ( ) No ( )
Documentation to support completion of hours attached: Yes ( ) No ( )
Completion of classroom training verified: Yes ( ) No ( )

Staff Name _____ Signature _____ Date _____

MINISTRY OF TRAINING, COLLEGES AND UNIVERSITIES
APPRENTICESHIP OFFICES IN ONTARIO (Appendix D)

Location	Contact	Location	Contact
Barrie 705-737-1431	55 Cedar Pointe Dr Unit 609, Barrie, ON L4N 5R7	**North Bay** 705-495-8515	200 First Ave West, North Bay, ON P1B 3B9
Belleville 613-968-5558	135 North Front St, Belleville, ON K8P 3B5	**Ottawa** 613-731-7100	Preston Square, 347 Preston St 3rd Flr, Ottawa, ON K1S 3H8
Brantford 519-756-5197	505 Park Rd North Suite 201, Brantford, ON N3R 7K8	**Owen Sound** 519-376-5790	1450 1st Ave West Suite 100, Owen Sound, ON N4K 6W2
Chatham 519-354-2766	870 Richmond St West 1st Floor, Chatham, ON N7M 5J5	**Pembroke** 613-735-3911	615 Pembroke St East, Pembroke, ON K8A 3L7
Cornwall 613-938-9702	132 Second St East Ste 202, Cornwall, ON K6H 1Y4	**Peterborough** 705-745-1918	901 Lansdowne St West, Peterborough, ON K9J 1Z5
Dryden 807-223-4632	Provincial Government Building, 479 Government St, Dryden, ON P8N 3K9	**Pickering (City of)** 905-837-7721	1420 Bayly St Unit 1, Pickering, ON L1W 3R4
Elliot Lake 705-848-4661	50 Hillside Dr North, Elliot Lake, ON P5A 1X4	**Sarnia** 519-542-7705	Bayside Mall, 150 Christina St North, Sarnia, ON N7T 7W5
Fort Frances 807-274-8634	922 Scott St 2nd Flr, Fort Frances, ON P9A 1J4	**Sault Ste. Marie** 705-945-6815	477 Queen St East 4th Flr, Sault Ste Marie, ON P6A 1Z5
Hamilton Central 905-521-7764	Ellen Fairclough Bldg, 119 King St West 8th Flr, Hamilton, ON L8P 4Y7	**St Catharines** 905-704-2991	Garden City Tower, 301 St Paul St 10th Flr, St Catharines, ON L2R 7R4
Kapuskasing 705-337-4381	Ontario Government Complex, 122 Government Rd West, Kapuskasing, ON P5N 2X8	**Sudbury** 705-564-3030	159 Cedar St Ste 506, Sudbury, ON P3E 6A5
Kenora 807-468-2879	227 1/2 Second St South, Kenora, ON P9N 1G4	**Thunder Bay** 807-346-1550	189 Red River Rd Suite 103, Thunder Bay, ON P7B 1A2
Kingston 613-548-1151	Cornell Corporate Centre, 299 Concession St Ste 201, Kingston, ON K7K 2B9	**Timmins** 705-235-1950	Ontario Government Complex, 5520 Highway 101 East Wing B, South Porcupine, ON P0N 1H0
Kitchener 519- 653-5758	4275 King St East Ste 200, Kitchener, ON N2P 2E9	**Toronto Central** 416-326-5800	625 Church St 1st Fl, Toronto, ON M7A 2B5
London 519-675-7788	1200 Commissioners Rd E Unit 72, London, ON N5Z 4R3	**Windsor Central** 519-973-1441	Roundhouse Centre, 3155 Howard Ave 2nd Fl, Ste 200, Windsor, ON N8X 4Y8
Mississauga (City of) 905-279-7333	The Emerald Centre, 10 Kingsbridge Garden Cir Ste 404, Mississauga, ON L5R 3K6		

For current office listings, please visit: *http://services.findhelp.ca/eo/tcu/appoff*

Completing Your Apprenticeship Program

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

- Check the Ontario College of Trades Public Register to make sure your Apprentices class membership is still active: https://tmsportal.collegeoftrades.ca/web/ocot-public-services-v3/public-registry
- Follow the completion instructions on the Completion Form (Appendix A) in the Log Book.
- Answer any questions that MTCU staff may have, and provide any additional completion documentation they may require.
- Once they confirm completion, MTCU will issue you a Certificate of Apprenticeship and notify the Ontario College of Trades of your completion.

After Your Apprenticeship

If you are in a trade with a certification exam, the College of Trades will **automatically** complete your membership in the Apprentices class and activate your 12-month membership in the Journeyperson Candidates class. This change will be reflected on your account with the College as well as on the College's Public Register.

Membership in the Journeyperson Candidates class will allow you to continue practising in a compulsory trade for 12 months while you prepare for and write your exam; if you are in a voluntary trade, it is your automatic approval to challenge the certification exam.

The College will send you a Journeyperson Candidates class welcome letter within 3 weeks of completion that outlines any/all of your future requirements for membership and examination as appropriate (different situations for voluntary and compulsory trades).

If you complete an apprenticeship program for which there is no exam, you can submit an application to become a member of the College's Journeypersons class on the basis of having earned a Certificate of Apprenticeship in the trade.

Preparing For Your Exam

Find out if your trade has a Certificate of Qualification exam at:
www.collegeoftrades.ca/wp-content/uploads/tradesOntarioTradesCodes_En.pdf

For permission to schedule an exam once completion is confirmed by MTCU, you must first contact the College's Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification exam fee. Once you have paid, contact your local MTCU Apprenticeship office to book your exam.

Download Ontario College of Trades exam preparation guide at:
www.collegeoftrades.ca/resources/exam-process **and/or view the exam preparation guide for Red Seal trades at:** www.red-seal.ca/w.2lc.4m.2@-eng.jsp

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