ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship Training Standard Log Book

Motorcycle Technician

310G

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 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.

Pathway to a Certificate of Qualification

Phase #1: Registration

Submit Application for Apprenticeship Training to MTCU Apprenticeship Office

Register a Training Agreement with MTCU
(i.e. sign Registered Training Agreement)

Submit OCOT (Apprentice Class) Membership Application
(with $60 +HST annual membership fee within 90 days of RTA)

Obtain Apprenticeship Training Standard from OCOT
(www.collegeoftrades.ca/training-standards)

Phase #2: Apprenticeship

Complete in-school training

Complete the in-class training set out in the Curriculum Training Standard established by OCOT at an approved Training Delivery Agent

Complete on-the-job training

Complete the on-the-job training set out in the Apprenticeship Training Standard ('Log Book') established by OCOT

Maintain OCOT annual membership fee: $60 +HST

- Apprentice eligible to apply for apprenticeship grants, incentives, and bonuses
- Sponsor eligible to apply for *Apprenticeship Training Tax Credit* and other incentives

Submit completed Apprenticeship Training Standard to MTCU Apprenticeship Office

MTCU issues Certificate of Apprenticeship

- Apprentice eligible to apply for *Apprenticeship Completion Bonus*
- Sponsor eligible to apply for *Apprenticeship Completion Employer Bonus*

Phase #3: Certification

Contact OCOT to make payment to attempt Certificate of Qualification examination
(exam attempt fee $150 +HST)

- Download the College's *Exam Preparation Guide* to help you prepare to attempt the Certificate of Qualification examination (www.collegeoftrades.ca/resources/exam-process)

Contact MTCU to schedule Certificate of Qualification examination attempt at local MTCU Apprenticeship Office

Attempt Certificate of Qualification examination
(must receive grade of 70% or higher to pass)

OCOT issues Certificate of Qualification and membership in Journeypersons Class
(annual membership fee $120 +HST)

LEGEND

- Ontario College of Trades — OCOT
- Ministry of Training, Colleges and Universities — MTCU

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.

Maintained with transfer to Ontario College of Trades (V200) 2003

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 Motorcycle Technician 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.

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

Scope of Practice

The Scope of Practice for the trade of Motorcycle Technician is set out in section 15 of Ontario Regulation 277/11 under OCTAA and reads as follows:

15. The scope of practice for the trade of motorcycle technician includes servicing, repairing, overhauling and inspecting motorcycles and testing them for faults and road-worthiness. O. Reg. 277/11, s. 15.

While the Log Book draws on the scope of practice regulation (Section 15 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 5,520 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.

Classroom Training Duration
Industry has identified 480 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.

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 Motorcycle Technician is compulsory.

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 Ministry of Training, Colleges and Universities approved Curriculum Standard

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

ESSENTIAL SKILLS SUMMARY SAMPLE

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 www.red-seal.ca.

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 achieved;
- 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.

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 submit 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 Motorcycle Technician – 310G

(All unshaded skill sets must be demonstrated/completed.)

SKILL SETS	*SKILLS*				
PROTECT SELF AND OTHERS **U4130.0**	Identify health and safety hazards in the workplace U4130.01	Wear, adjust, and maintain personal protective equipment U4130.02	Operate emergency safety equipment U4130.03	Practise good housekeeping in the workplace U4130.04	Operate and maintain tools and equipment in a safe manner U4130.05
	Ensure protection from fire hazards U4130.06	Handle and store hazardous materials U4130.07	Report injuries to supervisor U4130.08	Complete written safety and injury reports U4130.09	Apply basic first aid U4130.10
	Identify unsafe vehicles U4130.11				
APPLY GENERAL WORK PRACTICES AND PROCEDURES **U4131.0**	Perform preliminary diagnosis U4131.01	Access information in manufacturers' service manuals and other related service materials U4131.02	Select, operate, and maintain hand, cutting, pneumatic, and electric power tools U4131.03	Operate and maintain shop equipment U4131.04	Operate and maintain dimensional measuring devices U4131.05
	Select, operate, and maintain oxyacetylene arc, metal inert gas (MIG), and tungsten inert gas (TIG) welding equipment U4131.06	Replace fastening and sealing devices U4131.07	Select and replace or repair electrical wires and connectors U4131.08	Demonstrate troubleshooting techniques U4131.09	Perform customer relations activities U4131.10
	Perform proper dismantling, logging, protection, and storage of parts U4131.11	Document measurements and defects noted during inspection U4131.12			

PERFORM PRELIMINARY DIAGNOSIS **U4132.0**	Conduct visual examination of motorcycle U4132.01	Conduct a road test U4132.02	Isolate problem to a specific part of the motorcycle U4132.03	Prepare preliminary written estimates U4132.04	Prepare a written work order U4132.05
DIAGNOSE AND REPAIR TWO-STROKE AND FOUR- STROKE ENGINE (MECHANICAL) **U4133.0**	Perform a visual inspection of engine externals U4133.01	Listen to engine using an engine stethoscope U4133.02	Remove spark plugs U4133.03	Conduct compression and leak-down test U4133.04	Conduct crankcase pressure test U4133.05
	Perform a visual inspection and functionally test oil-injection pump U4133.06	Remove and visually inspect cylinder heads U4133.07	Remove accumulated exhaust carbon from cylinder heads U4133.08	Resurface cylinder heads U4133.09	Remove cylinder block from crankcase U4133.10
	Perform a visual inspection of cylinder components U4133.11	Clean and measure cylinder components U4133.12	Perform a visual inspection and physically measure intake reed valves and exhaust power valves U4133.13	Resleeve and resize cylinder U4133.14	Deglaze cylinder bore U4133.15
	Chamfer cylinder ports U4133.16	Check and adjust piston ring end gap U4133.17	Remove engine from frame U4133.18	Disassemble engine U4133.19	Disassemble, visually inspect, clean, and measure crankshaft components U4133.20
	Perform a visual inspection of intake rotary valves U4133.21	Perform a visual inspection of crankcases, support bearings, and bushings U4133.22	Replace crankshaft components U4133.23	Perform a visual inspection of counterbalancer components U4133.24	Install counterbalancer and crankshaft in engine crankcases U4133.25
	Reinstall intake rotary valve in crankcase U4133.26	Reinstall internal cylinder components U4133.27	Reinstall engine in motorcycle frame U4133.28	Bleed air from and adjust oil-injector pump U4133.29	Replace fluids U4133.30
	Perform final adjustments U4133.31				

DIAGNOSE AND REPAIR FUEL CARBURATION SYSTEM **U4134.0**	Perform a visual inspection for sufficient fuel quantity and quality U4134.01	Perform test to ensure fuel is of correct type U4134.02	Perform a visual and physical inspection of fuel venting systems U4134.03	Perform a visual inspection of air filters and air box U4134.04	Test operation of petcock U4134.05
	Inspect and repair or replace fuel lines and filters U4134.06	Perform functional tests of fuel pump operation U4134.07	Test and repair fuel pump electrical circuit components U4134.08	Replace fuel pump U4134.09	Perform a visual inspection and functionally test carburettor control linkage and cables U4134.10
	Remove, replace, and adjust carburettor cables and control linkages U4134.11	Perform a visual inspection and functionally check mounting and condition of intake manifolds and fittings U4134.12	Remove carburettor from manifold U4134.13	Disassemble carburettor U4134.14	Perform a visual inspection of and clean float bowl U4134.15
	Perform functional tests, and replace and adjust float, needle, needle seat, and float bowl vent U4134.16	Clean and perform a visual inspection of pilot, intermediate, and main jets, and fuel and air passages in carburettor body U4134.17	Clean and perform a visual inspection of accelerator pump components U4134.18	Clean, perform a visual inspection of, and replace carburettor venturi system components U4134.19	Reassemble carburettor components U4134.20
	Install carburettor on intake manifolds U4134.21	Adjust carburettor U4134.22			

DIAGNOSE AND REPAIR FUEL-INJECTION SYSTEM **U4135.0**	Perform a visual inspection for sufficient fuel quantity and quality U4135.01	Perform a test to ensure fuel is of correct type U4135.02	Perform a visual inspection of air filters and air box U4135.03	Perform a physical inspection of fuel tank components U4135.04	Perform a physical inspection of fuel lines, in-line filters, hoses, and fittings U4135.05
	Test fuel pump operation and fuel pressure regulation system U4135.06	Replace fuel pump pressure regulation valve, hoses, fittings, fuel pump lines, and electrical components U4135.07	Test fuel pump electrical circuits U4135.08	Inspect and replace cables and linkages U4135.09	Inspect and functionally test intake manifold, fittings, and vacuum hoses U4135.10
	Perform functional test of injector U4135.11	Remove and perform a physical inspection of injector body U4135.12	Replace injectors U4135.13	Compare fuel-injector computer codes with service manual U4135.14	Perform inspection of fuel-injector control system components U4135.15
	Repair and replace injector control system components U4135.16				
DIAGNOSE AND REPAIR COOLING SYSTEM **U4136.0**	For air-cooled engine perform a visual inspection for damaged fins and proper air flow and remove restriction U4136.01	For liquid-cooled engine perform a visual inspection of cooling system components U4136.02	Perform functional test of coolant strength and quantity in radiator U4136.03	Perform pressure test of cooling system components U4136.04	Test cooling system controls U4136.05
	Replace cooling system components U4136.06	Check, replace, and rebuild water pumps and drives U4136.07	Flush, bleed, and refill cooling system U4136.08		
DIAGNOSE AND REPAIR EXHAUST SYSTEM **U4137.0**	Perform a visual inspection of exhaust system U4137.01	Perform an audible inspection of exhaust system U4137.02	Disassemble and decarbonize exhaust system components U4137.03	Disassemble, inspect, and repair exhaust power valve components U4137.04	Repair or replace exhaust system components U4137.05

DIAGNOSE AND REPAIR DRIVELINE **U4138.0**	Perform a visual and physical inspection U4138.01	Inspect clutch activating mechanism U4138.02	Adjust clutch cable/linkage freeplay U4138.03	Expose and inspect primary drive components U4138.04	Reassemble primary drive components U4138.05
	Disassemble, clean, and visually inspect clutch components U4138.06	Reassemble and install clutch assembly, replacing defective components U4138.07	Perform operational tests of kick-starter U4138.08	Replace, lubricate, and reassemble kick-starter components U4138.09	Inspect external shifter mechanism U4138.10
	Replace, lubricate, and adjust external shifter mechanism U4138.11	Perform a visual inspection of outer transmission case U4138.12	Expose, disassemble, and inspect transmission internal parts U4138.13	Clean and measure transmission components U4138.14	Perform a visual inspection of inner transmission case U4138.15
	Lubricate, replace, and reassemble transmission components U4138.16	Expose and perform a visual inspection of final chain/belt drive U4138.17	Disassemble, replace, and adjust chains, sprockets, belts, and pulleys U4138.18	Inspect and replace front bevel gears U4138.19	Inspect and replace driveshaft assembly components U4138.20
	Disassemble, clean, and inspect final drive housing components U4138.21	Lubricate, replace, reassemble, and adjust final drive components U4138.22			

DIAGNOSE AND REPAIR STEERING SYSTEM **U4139.0**	Inspect front-end and frame components visually and physically U4139.01	Functionally test steering stops and steering lock U4139.02	Adjust steering head bearing and front wheel bearings U4139.03	Disassemble and inspect steering head components U4139.04	Repair or replace and assemble steering head components U4139.05
	Inspect or replace hydraulic steering friction dampeners U4139.06				

DIAGNOSE AND REPAIR FRONT SUSPENSION	Perform a visual inspection U4140.01	Perform operational test of front suspension system hydraulic and pneumatic anti-dive mechanisms	Disassemble, inspect, and measure front fork assembly components U4140.03	Replace or reassemble fork assembly components U4140.04	Inspect and functionally test and repair air compressor system and components U4140.05
	Identify and service front suspension system U4140.06	Perform suspension sag measurements U4140.07			
DIAGNOSE AND REPAIR REAR SUSPENSION U4141.0	Inspect rear suspension components U4141.01	Disassemble, clean, and inspect rear suspension components U4141.02	Inspect and replace or rebuild shocks U4141.03	Replace rear suspension components and reassemble U4141.04	Perform suspension sag measurements U4141.05
	Inspect, test, adjust, and replace auto levelling system components U4141.06	Align back wheel to front wheel U4141.07			
DIAGNOSE AND REPAIR MECHANICAL BRAKING SYSTEM U4142.0	Perform a visual and an operational inspection of brake levers, cables, and linkages U4142.01	Lubricate, adjust, and replace, linkages, cables, and levers U4142.02	Remove wheels U4142.03	Remove, clean, and perform visual inspections of internal and external brake components U4142.04	Measure brake system components
	Rebuild and replace mechanical calipers U4142.06	Replace friction material on brake shoes in calipers U4142.07	Resurface brake drums and discs U4142.08	Replace and adjust drums, rotors, and friction materials on wheels U4142.09	Reassemble, lubricate, and adjust mechanical braking systems U4142.10

DIAGNOSE AND REPAIR HYDRAULIC BRAKING SYSTEM **U4143.0**	Perform a visual and physical inspection U4143.01	Remove, rebuild, or replace master cylinders, wheel cylinders, and calipers U4143.02	Remove and replace brake fluid proportioning valve U4143.03	Identify the requirement of care and attention to the usage or spillage of brake fluid U4143.04	Remove and replace brake lines, banjo bolts, and crush washers U4143.05
	Measure and inspect brake drums and discs U4143.06	Measure and replace disc brake pads and friction material on brake shoes U4143.07	Inspect and test anti-lock braking system U4143.08	Replace and adjust anti-lock braking system components U4143.09	Flush, replenish, and bleed fluids U4143.10
	Adjust lever freeplay at master cylinder U4143.11				

DIAGNOSE AND REPAIR TIRES AND WHEELS **U4144.0**	Perform a visual and physical inspection of tires U4144.01	Inspect and test wheels U4144.02	Remove, clean, and inspect internal wheel and hub components U4144.03	Lubricate and reassemble hub components U4144.04	Clean and inspect tire and rim components U4144.05
	Remove, replace, and adjust tension of spokes U4144.06	Install tire on rim U4144.07	Balance wheel assembly U4144.08	Replace tire/wheel assembly U4144.09	

DIAGNOSE AND REPAIR CHARGING SYSTEM **U4145.0**	Perform a visual inspection of wiring connectors and fuses U4145.01	Inspect, clean, identify, and test battery U4145.02	Charge or replace battery U4145.03	Test alternating current generator U4145.04	Repair wiring and connections U4145.05
	Test regulator/rectifier U4145.06				

DIAGNOSE AND REPAIR ELECTRIC STARTING SYSTEM **U4146.0**	Inspect and clean battery, power, and ground wiring and connectors U4146.01	Identify battery, type 1 charges, and load test, and replace battery U4146.02	Perform functional tests of starting system components U4146.03	Repair or replace switches, solenoids, and starter relays U4146.04	Disassemble, clean, and measure starter components U4146.05
	Repair or replace starter motor components U4146.06	Replace mechanical starter drive components U4146.07	Assemble and lubricate starter system components U4146.08		
DIAGNOSE AND REPAIR IGNITION SYSTEM **U4147.0**	Inspect and clean battery, power, and ground wiring and connectors U4147.01	Charge, load test, and replace battery U4147.02	Identify and test power source to ignition U4147.03	Test for spark at plug(s) U4147.04	Test and replace high-tension leads and spark plug cap U4147.05
	Test and replace ignition coils U4147.06	Test and repair wiring and connectors U4147.07	Inspect and replace points and condenser U4147.08	Inspect, lubricate, or replace ignition advance system and components U4147.09	Adjust timing of breaker-point ignition system U4147.10
	Adjust air gap on pick-up coil on electronic ignition U4147.11	Test and replace pick-up coil on electronic ignition U4147.12	Test and replace ignition module and related wiring U4147.13	Adjust and clean timing of electronic ignition system U4147.14	
DIAGNOSE AND REPAIR ELECTRICAL ANCILLARIES **U4148.0**	Inspect and clean battery, power, and ground wiring and connectors U4148.01	Charge, load test, and replace batteries U4148.02	Perform visual and functional tests of fuses, circuit breakers, and fusible links U4148.03	Isolate and repair opens, shorts, and grounds in wiring and connectors U4148.04	Test ancillary operating switches U4148.05
	Repair or replace accessory operating switches U4148.06	Test and replace defective ancillaries U4148.07			

DIAGNOSE AND REPAIR CHASSIS AND CHASSIS COMPONENTS **U4149.0**	Perform a visual inspection of chassis components U4149.01	Perform functional test of frame and suspension alignment U4149.02	Replace chassis and chassis components U4149.03		

SERVICE BODY PARTS **U4150.0**	Perform a visual inspection of body parts U4150.01	Disassemble and correctly store body parts U4150.02	Perform a visual inspection and identify body part hardware U4150.03	Repair or replace body part hardware U4150.04	Repair or replace body parts U4150.05
	Replace body parts U4150.06				

DIAGNOSE AND REPAIR SIDECAR **U4151.0**	Measure and perform a visual inspection of sidecar unit, frame, mountings, and alignment U4151.01	Perform functional tests and repairs to sidecar braking systems U4151.02	Align sidecars to motorcycle frame U4151.03	Repair or replace sidecar components U4151.04	Reassemble, lubricate, and adjust sidecar components U4151.05

LIST OF TRAINERS

JOURNEYPERSON'S NAME (Please print)	**JOURNEYPERSON'S SIGNATURE**	**JOURNEYPERSON'S COLLEGE OF TRADES ID#**

All Trainers must hold a valid Certificate of Qualification and be a member of the College of Trades' Journeypersons class. Check the Ontario College of Trades Public Register to make sure your Journeypersons class membership is still active:
https://tmsportal.collegeoftrades.ca/web/ocot-public-services-v3/public-registry

U4130.0 PROTECT SELF AND OTHERS

GENERAL PERFORMANCE OBJECTIVES

Protect self and others in the workplace by interpreting government and company safety standards and regulations, identifying health and safety hazards, and maintaining good housekeeping and working practices so that the workplace remains injury free, government and company safety and environmental standards are met, and all tools and equipment are maintained in safe operating condition.

SKILLS

U4130.01 Identify health and safety hazards in the workplace, so that the potential for personal injury and damage to equipment, vehicles, and the environment are minimized, corrective action as defined in government legislation or company policies is taken, and hazards are reported.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.02 Wear, adjust, and maintain personal protective equipment, such as eye, ear, hand, and foot protectors, so that safety clothing is correctly fitted and provides optimum protection to the wearer for the task being performed, including helmets, gloves, riding boots, and equipment necessary for the safe operation of a motorcycle.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.03 Operate emergency safety equipment such as fire extinguishers, respirators, stretchers, and fire blankets to extinguish fires and administer first aid, so that procedures are carried out in safe, efficient manner in accordance with health and safety regulations.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.04 **Practise good housekeeping in the workplace** by cleaning up oil spills, keeping work area clean and clear of obstructions, and storing tools so that the potential for accident or injury is minimized and tools and equipment are in place and available for the next job.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.05 **Operate and maintain tools and equipment in a safe manner** so that vehicle damage and personal injury are prevented, and tools and equipment are kept clean and in good working order.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.06 **Ensure protection from fire hazards** by keeping work area clear, identifying and removing potential fire hazards, and carefully handling explosive and flammable materials, so that hazardous situations and unsafe work practices are eliminated.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.07 **Handle and store hazardous materials**, such as battery acid, brake dust, chemicals, and exhaust gases, using specified handling and storage equipment so that the technician is protected from injury and the environment from contamination, and so that procedures followed are in compliance with provincial and federal legislation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.08 **Report injuries to supervisor or service manager** promptly and efficiently, ensuring that the injured person is attended to, information is recorded precisely as to how incident occurred, and future recurrence of similar accidents is prevented.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.09 **Complete written safety and injury reports,** following applicable safety acts and regulations, so that information for the Workplace Safety and Insurance Board and legal and insurance forms is complete and accurate and required deadlines are adhered to.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.10 **Apply basic first aid** to treat conditions such as sudden illnesses, burns, cuts, abrasions, sprains, chemical inhalations, and contaminants in eyes, so that the condition of the victim is stabilized and he or she is prepared for transport to more advanced medical care facilities.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4130.11 **Identify unsafe vehicles** by checking for damaged or defective components in the braking, steering, exhaust, fuel, and suspension systems, so that faults can be corrected and the vehicle can be restored to a safe operating condition.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4130: PROTECT SELF AND OTHERS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4131.0 APPLY GENERAL WORK PRACTICES AND PROCEDURES

GENERAL PERFORMANCE OBJECTIVES

Apply general work practices and procedures in the repair of motorcycles, including the development of effective customer relations, the selection and application of troubleshooting techniques, the access of technical information, the application and care of tools, equipment, and fastening and sealing devices, and the application of electrical wiring techniques, so that customers' needs and expectations are met, an efficient and systematic diagnosis and repair procedure is followed, and repairs meet manufacturers' specifications.

SKILLS

U4131.01 Perform preliminary diagnosis, so that customers' complaints are verified and documented using effective communication skills and correct use of industry terminology and ethical business practices, and a repair order is prepared that provides a precise agreement on repair procedures to be performed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.02 Access information in manufacturers' service manuals and other related service materials, such as parts bulletins, service supplements, parts catalogues, and technical updates, so that service information and procedures are correctly followed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.03 Select, operate, and maintain hand, cutting, pneumatic, and electric power tools, so that the tool selected is the correct one for the application and manufacturers' recommended operating and servicing procedures are followed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.04 Operate and maintain shop equipment such as cleaning equipment, hydraulic press, lifting and jacking equipment, hydraulic pullers, and air compressors, so that manufacturers' recommended operating and servicing procedures are adhered to and the equipment is correct for the job being performed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.05 Operate and maintain dimensional measuring devices such as micrometers, calipers, gauges, straight edges, and dial indicators, so that an accurate measurement is obtained and devices are clean, calibrated, and stored to prevent damage.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.06 Select, operate, and maintain oxyacetylene, arc, metal inert gas (MIG), and tungsten inert gas (TIG) welding equipment, so that metal surfaces are prepared for welding, personal protection equipment is worn or positioned, and voltage, amperage, gas pressures, and feeds are adjusted in accordance with manufacturers' specifications and welding operations are performed in accordance with government and company safety regulations.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.07 Replace fastening and sealing devices such as screws, bolts, rivets, nuts, washers, snap rings, lock-tite components, pins, seals, gaskets, and sealants, so that joined surfaces are fitted, secured, leak resistant, and meet manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.08 Select and replace or repair electrical wires and connectors so that electrical/electronic integrity is maintained, electromagnetic interference is isolated, and all shorts and grounds are repaired.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.09 Demonstrate troubleshooting techniques using electronic test equipment, on-board diagnostics, and service literature, so that faults are isolated systematically and repairs are performed according to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.10 **Perform customer relations activities**, including providing an honest interpretation of the vehicle's condition, explaining repairs and costs, providing a written statement of work performed, and resolving customers' complaints so that customers' expectations are met and information is communicated in a courteous and friendly manner.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.11 **Perform proper dismantling, logging, protection, and storage of parts** in the proper order so that assembling is correct and coordinated as per manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4131.12 **Document measurements and defects noted during inspection**, using computer and writing skills to convey the condition of the motorcycle to the client and the service team.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4131: APPLY GENERAL WORK PRACTICES AND PROCEDURES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4132.0 PERFORM PRELIMINARY DIAGNOSIS

GENERAL PERFORMANCE OBJECTIVES

Perform preliminary diagnosis of motorcycle so that customers' complaints are verified and documented, a visual inspection and road test is conducted, and a repair order and estimate are prepared that provide a precise agreement on repair procedures to be performed.

SKILLS

U4132.01 Conduct visual examination of motorcycle so that the general condition of the motorcycle and its related safety systems such as brakes, steering, and suspension can be assessed and requirement for road test can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4132.02 Conduct a road test of the motorcycle so that the customer's complaint can be verified and an accurate assessment of the damage can be made in order for a written repair estimate to be presented to the customer for approval.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4132.03 Isolate problem to a specific part of the motorcycle using manufacturers' recommended diagnosis procedures so that repairs can be made in an efficient and cost-effective manner.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4132.04 **Prepare preliminary written estimates** that provides precise contracts on repairs to be made and obtains customers' authorization to proceed with additional diagnosis, inspection, and repairs as per the provincial repair act.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4132.05 **Prepare a written work order** using effective written communication skills and ethical business practice that includes the work to be performed, the parts to be replaced, additional diagnostic requirements, and external repair services, and retain parts for owners' or manufacturers' inspection as per the provincial repair act.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4132: PERFORM PRELIMINARY DIAGNOSIS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4133.0 DIAGNOSE AND REPAIR TWO-STROKE AND FOUR-STROKE ENGINES (MECHANICAL)

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair two-stroke and four-stroke engines by performing tests such as a leak-down test, vacuum tests, a compression test, an oil-pressure test, and a crankcase pressure test, removing cylinder heads and cylinder block, visually inspecting and taking physical measurements of engine components, identifying and replacing defective components, and reassembling cylinder cases and cylinder block and head, so that the engine conforms to manufacturers' specifications.

SKILLS

U4133.01 **Perform a visual inspection of engine externals**, fuel, oil, coolant, and exhaust carbon leaks.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.02 **Listen to engine using an engine stethoscope** so that abnormal internal engine noises such as knocks, rattles, grinding, and pings can be specifically located and identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.03 **Remove spark plugs** using wrenches and sockets so that condition of spark plugs, cylinder head threads, and spark plug seal washers and engine condition can be assessed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.04 **Conduct compression and leak-down tests**, using a cylinder compression gauge and leak-down tester, so that damaged or worn pistons, rings, cylinders, and valves can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.05 **Conduct crankcase pressure test** using crankcase pressure tester so that the condition of crankcase seals, base gaskets, and head gaskets and the crankcase's porosity can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.06 **Perform a visual inspection and functionally test oil-injection pump** using tools, feeler gauges, wrenches, pliers, and screwdrivers, so that injector oil flow is determined and can be compared with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.07 **Remove and visually inspect cylinder heads** and cylinder mating surface using wrenches, sockets, straight edges, deadblow hammer, and feeler gauges, so that defects are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.08 **Remove accumulated exhaust carbon from cylinder heads** using a wire brush, a carbon scraper, air pressure, and engine cleaning solvents, so that the cylinder head's combustion chamber is free of carbon deposits.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.09 **Resurface cylinder heads** using cylinder head resurfacing equipment so that the cylinder head mating surfaces are free of scratches, scrapes, and warpage.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.10 **Remove cylinder block from crankcase** using wrenches, sockets, and deadblow hammer so that pistons and related components are exposed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.11 **Perform a visual inspection of cylinder components** such as pistons, rings, wrist pins, and bearings, so that general condition can be determined and specific damage identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.12 **Clean and measure cylinder components**, such as pistons, piston rings, and cylinder bores, using tools and equipment such as wire brushes, scrapers, engine cleaning solvents, dial indicator, bore gauge, and micrometer, and compare the measurements with manufacturers' specifications so components requiring repair or replacement can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.13 **Perform a visual inspection and physically measure intake reed valves and exhaust power valves** using feeler gauges and vernier calipers, so that worn or damaged intake reed valves and exhaust power valves requiring repair or replacement can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.14 **Resleeve and resize cylinder** using heat, hydraulic press, boring bar, hone, micrometers, cylinder bore gauges, and feeler gauges, so that damaged cylinder sleeves are removed and new cylinder sleeves are securely installed in cylinder block with sleeve bored out to meet manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.15 **Deglaze cylinder bore** using a cylinder hone so that internal cylinder surface is smooth, not pitted, and prepared to permit new piston ring seating.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.16 **Chamfer cylinder ports** using a file so that the port edges will allow for smooth operation of piston rings.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.17 **Check and adjust piston ring end gap** using feeler gauges and a file so that ring end gap meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.18 **Remove engine from frame** using tools such as wrenches, sockets, and screwdrivers so that the engine can be placed in work area, ready for disassembly.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.19 **Disassemble engine** using wrenches, sockets, and manufacturers' specialized tools, so that crankshaft and counterbalancer assemblies are removed from crankcases.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.20 **Disassemble, visually inspect, clean, and measure crankshaft components** such as connecting rods, connecting rod bearings, flywheels, and crankshaft bearings using heat, hydraulic presses, bearing pullers, engine cleaning solvents, dial indicators, and vernier calipers, so that crankshaft parts can be cleaned, measurements taken, and those measurements compared with manufacturers' specifications to identify parts that do not meet manufacturers' specified wear limits.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.21 **Perform a visual inspection of intake rotary valves** for worn or chipped edges and scoring so that valves requiring replacement are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.22 **Perform a visual inspection of crankcases, support bearings, and bushings** for wear, corrosion, or damage so that components that require repair or replacement are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.23 **Replace crankshaft components** such as bearings, connecting rods, and flywheels, and rebuild crankshaft using crank aligning jig, dial gauges, and hydraulic presses so that the crankshaft is reassembled to the manufacturers' specifications and prepared for reinstallation into the crankcase.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.24 **Perform a visual inspection of counterbalancer components** such as bearings, shafts, chains, and sprockets, so that damaged, worn, or corroded parts may be identified and requirement for repair or replacement determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.25 **Install counterbalancer and crankshaft in engine crankcases** so that crankshaft and balancer timing marks are aligned and crankcase components rotate freely.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.26 **Reinstall intake rotary valve in crankcase** so that correct fuel-intake timing is maintained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.27 **Reinstall internal cylinder components** such as pistons, rings, wrist pins, and cylinder block using ring compressors, torque wrench, wrenches, and sockets, so that the engine is assembled in accordance with manufacturers' service manuals and engine is prepared for reinstallation in motorcycle frame.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.28 **Reinstall engine in motorcycle frame** using wrenches, sockets, screwdrivers, and pliers, so that the engine is secured in the frame with all control cables and electrical connections reconnected.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.29 **Bleed air from and adjust oil-injector pump** including oil feed lines using screwdrivers, feeler gauges, wrenches, and pliers, so that the oil pump is adjusted to manufacturers' specifications, oil lines are free of air, and oil is delivered to engine components during operation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.30 **Replace fluids** such as oil and coolant so that correct grade and quantity of fluids are added and all fluid levels are in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4133.31 **Perform final adjustments** including control cable adjustment and ignition timing using tools such as wrenches, sockets, screwdrivers, feeler gauges, and ignition timing light so that basic ignition timing and control cable alignment and movement will permit optimal operation of the engine.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4133: DIAGNOSE AND REPAIR TWO-STROKE AND FOUR-STROKE ENGINES (MECHANICAL)		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4134.0 DIAGNOSE AND REPAIR FUEL CARBURATION SYSTEM

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair fuel carburetted systems by visually and physically inspecting fuel system components such as fuel tanks and caps, fuel pumps, petcocks, control cables, and carburettors, disassembling carburettors, repairing or replacing defective parts, and reassembling so that the carburetted fuel delivery system's condition is known and functions in accordance with manufactures' specifications.

SKILLS

U4134.01 Perform a visual inspection for sufficient fuel quantity and quality so that any contaminations such as rust, water, sand, and paint or aging of fuel are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.02 Perform test to ensure fuel is of correct type so that correct fuel can be identified as per manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.03 **Perform a visual and physical inspection of fuel venting system,** removing any obstruction so that fuel tank venting is maintained and fuel flows freely from tank.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.04 **Perform a visual inspection of air filters and air box** using screwdrivers, wrenches, and air pressure so that air boxes and air filters are clear of obstructions and installed in accordance with manufacturers' service manuals.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.05 **Test operation of petcock** using vacuum pump, screwdrivers, and wrenches to determine if fuel flow is adequate and positively controlled and if leaks are present.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.06 **Inspect and repair or replace fuel lines and filters**, so that any damaged, deteriorated, or misrouted and restricted lines are identified and repaired, positive fuel flow is maintained, leaks are eliminated, and restricted fuel filters are replaced.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.07 **Perform functional tests of fuel pump operation** using pressure gauges and a graduated cylinder so that fuel delivery and pressure are determined and can be compared with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.08 **Test and repair fuel pump electrical circuit components** such as relays, fuses, switches, connections, power source, and solenoids, using a multimeter, soldering equipment, electrical termination tools, shrink wrap, and electrical tape, so that open and short circuits and defective components are identified, repaired, or replaced and continuity of circuit is maintained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.09 **Replace fuel pump** using wrenches and screwdrivers so that positive fuel delivery is maintained at manufacturers' specified rates.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.10 **Perform a visual inspection and functionally test carburettor control linkage and cables** for rusting, kinking, and routing, so that worn, damaged, and improperly routed cables are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.11 Remove, replace, and adjust carburettor cables and control linkages, using wrenches and screwdrivers so that cables and linkages operate freely and meet manufacturers' specifications for freeplay.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.12 Perform a visual inspection and functionally check mounting and condition of intake manifolds and fittings using screwdrivers and wrenches, so that defective and leaking manifolds and corroded, damaged, or missing fittings are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.13 Remove carburettor from manifold using wrenches and screwdrivers so that carburettor is fully disassembled, cleaned, measured, and repaired.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.14 Disassemble carburettor using wrenches and screwdrivers, so that components such as float bowls, emulsion tubes, jets, slide mechanisms, diaphragms, accelerator pumps, choke plungers, needle, and seats are cleaned and inspected to determine the requirement for component repair or replacement.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.15 Perform a visual inspection of and clean float bowl using engine cleaning solvents so that contaminants such as water, rust, varnish, and dirt are removed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.16 Perform functional tests, and replace and adjust float, needle, needle seat, and float bowl vent using carburettor float level gauge, so that float level meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.17 Clean and perform a visual inspection of pilot, intermediate, and main jets, and fuel and air passages in carburettor body using appropriate cleaning solvents and air pressure, so that all passageways in the carburettor system are not restricted.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.18 Clean and perform a visual inspection of accelerator pump components such as pump housing, diaphragms, springs, actuating rods, o-rings, fuel passages, and external lines using engine cleaning solvent and air pressure, so that all fuel passageways in the system are not restricted.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.19 Clean, perform a visual inspection of, and replace carburettor venturi system components, such as slide, diaphragm, air passages, slide guides, slide bore, butterfly plate, springs, internal linkages, and grooves, using appropriate cleaning solvent and air pressure so that venturi system components operate without restriction.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.20 Reassemble carburettor components including the replacement of jets and jet needles, and the adjustment of jet needle positions and mixture screws using screwdrivers and wrenches, so that carburettor is assembled in accordance with service manual specifications and prepared for installation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.21 Install carburettor on intake manifolds using wrenches and screwdrivers, so that it is mounted securely to the motorcycle without leaks in the intake system and is prepared for final adjustment.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4134.22 **Adjust carburettor**, including synchronizing of slides, choke adjustment, fuel mixture adjustment, and accelerator pump stroke using synchronization gauges, screwdrivers, and wrenches, so that final carburettor adjustments provide correct fuel/air mixture in accordance with manufacturers' specifications and intake vacuum among individual cylinders is balanced and equal.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4134: DIAGNOSE AND REPAIR FUEL CARBURATION SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4135.0 DIAGNOSE AND REPAIR FUEL-INJECTION SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair fuel-injection systems by inspecting, testing, and replacing fuel delivery components such as fuel pumps, fuel filters, sensor, injectors, fuel lines, relays, wiring system, cables, linkages, and control modules so that condition of the fuel system is known and operation is restored to manufacturers' specifications.

SKILLS

U4135.01 **Perform a visual inspection for sufficient fuel quantity and quality** so that any contaminations such as rust, water, sand, paint, or aging of fuel are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.02 **Perform a test to ensure fuel is of correct type** so that correct fuel can be identified as per manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.03 **Perform a visual inspection of air filters and air box** using screwdrivers, wrenches, and air pressure so that air boxes and air filters are clear of obstruction and air filter is installed properly.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.04 **Perform a physical inspection of fuel tank components,** such as petcocks, and fuel tank cap venting using a vacuum pump, pliers, and screwdrivers to determine adequacy of fuel flow from petcock and to isolate restrictions or venting problems.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.05 **Perform a physical inspection of fuel lines, in-line filters, hoses, and fittings** using hand tools such as sockets and wrenches so that fuel leaks and fuel restrictions are identified and conditions such as chafing, pinching, cracking, and misrouting of lines and hoses are determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.06 **Test fuel pump operation and fuel pressure regulation system** using pressure gauges so that fuel pressure is known and compared with manufacturers' specifications and defective or restricted components such as fuel pump and pressure regulator valve can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.07 **Replace fuel pump pressure regulation valve, hoses, fittings, fuel pump lines, and electrical components** using tools such as sockets, wrenches, screwdrivers, and pliers, so that fuel is supplied to injector(s) in the correct amount and fuel pump pressure is within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.08 **Test fuel pump electrical circuits** using multimeters, test light, manufacturers' tools, and information and wiring schematics so that open or shorted circuits of components such as solenoids, control modules, relays, and fuses can be identified and the requirement to repair or replace determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.09 **Inspect and replace cables and linkages** using hand tools and measuring devices such as vernier caliper, steel rule, sockets, wrenches, screwdrivers, and pliers, so that cables and linkages operate freely, and freeplay is adjusted in accordance with service manuals.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.10 **Inspect and functionally test intake manifold, fittings, and vacuum hoses** using various leak-detection methods, sockets, wrenches, screwdrivers, and pliers, so that manifolds, fittings, and vacuum hoses are checked for leaks, cracks, and deterioration.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.11 **Perform functional test of injector** using diagnostic method to determine that the injection solenoid opens and closes according to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.12 **Remove and perform a physical inspection of injector body** using hand tools such as sockets, wrenches, and screwdrivers so that all fuel and air leaks can be identified and the requirement to repair or replace components to seal leaks can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.13 **Replace injectors** using hand tools such as sockets, wrenches, and screwdrivers, so that injectors are air tight, securely fastened to the manifold, and operate at correct fuel pressure without leaks and that electrical connectors are clean and intact.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.14 Compare fuel-injector computer codes with service manual so that defective fuel-injection components can be isolated and the requirement to repair or replace determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.15 Perform inspection of fuel-injector control system components such as sensors, relays, microprocessors, fuses, and wiring using multimeters, test lights, wrenches, sockets, screwdrivers, and pliers so that sensors and computer module are operating within manufacturers' specifications, continuity of injector circuit is verified, and connectors are clean and tight.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4135.16 Repair and replace injector control system components such as sensors, relays, microprocessors, fuses, and wiring using hand tools such as wrenches, pliers, screwdrivers, and sockets, so that the fuel is delivered to the cylinders at a pressure and rate in accordance with the manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4135: DIAGNOSE AND REPAIR FUEL-INJECTION SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4136.0 DIAGNOSE AND REPAIR COOLING SYSTEM GENERAL

PERFORMANCE OBJECTIVES

Diagnose and repair system by visually inspecting and testing cooling system components, such as radiators, thermostat, sensor, hoses, engine fans, water pump, clamps, and fans, by replacing or repairing defective components and flushing and replenishing coolant so that operating temperatures are maintained within manufacturers' specifications and all leaks are eliminated.

SKILLS

U4136.01 For air-cooled engine perform a visual inspection for damaged fins and proper air flow and remove restrictions such as dirt, grease, and foreign material using scrapers so that proper operating temperatures are maintained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.02 For liquid-cooled engine perform a visual inspection of cooling system components such as radiator, radiator cap, hoses, and clamps to identify leaks and proper fluid level in surge tank, and inspect radiator for unrestricted air flow so that temperatures are maintained within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.03 Perform functional test of coolant strength and quantity in radiator using antifreeze tester, so that antifreeze strength and quantity is maintained within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.04 **Perform pressure test of cooling system components** such as radiator, cap, hoses, and engine using sockets, wrenches, screwdrivers, pliers, and pressure tester, so that leaks and defective components can be isolated.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.05 **Test cooling system controls** such as thermostat, sensors, fans, temperature gauge, and related wiring using multimeter, test light, socket, wrenches, pliers, screwdrivers, and thermometer, or methods recommended by manufacturer, so that defective components can be identified and the requirement to repair or replace components determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.06 **Replace cooling system components** such as radiator, cap, hoses, thermostat, fan, temperature sensors, related wiring, and temperature gauge using wrenches, sockets, screwdrivers, and pliers, so that leaks are eliminated and operating temperatures are within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.07 **Check, replace, and rebuild water pumps and drives** using snap ring pliers, wrenches, sockets, screwdrivers, pliers, and gasket scraper, so that coolant circulation is maintained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4136.08 **Flush, bleed, and refill cooling system** using wrenches, sockets, pliers, and screwdrivers, so that foreign material such as scale is removed from the system and correct quantity and quality of coolant is replaced to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4136: DIAGNOSE AND REPAIR COOLING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4137.0 DIAGNOSE AND REPAIR EXHAUST SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair exhaust system by performing visual and audible inspection, replacing damaged or corroded components such as heat shield, head pipes, mufflers, clamps, brackets, hangers, gaskets, and springs so that they are securely fastened and function within manufacturers' specifications.

SKILLS

U4137.01 **Perform a visual inspection of exhaust systems** for type, discoloration, holes, corrosion, secure mounting, and dents, so that damaged components are identified and repair or replacement requirements are determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4137.02 **Perform an audible inspection of exhaust system** so that loose inner clamps, parts, exhaust leaks, excessive noise, and modification to exhaust system components can be detected and repaired.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4137.03 **Disassemble and decarbonize exhaust system components** including header pipe, muffler, and clamps using sockets, wrenches, pliers, scraper, and screwdrivers, so that exhaust system and exhaust port can be inspected for carbon build-up and exhaust carbon can be removed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4137.04 **Disassemble, inspect, and repair exhaust power valve components** using sockets, wrenches, and screwdrivers so that the power valve operates according to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4137.05 **Repair or replace exhaust system components** such as header pipes, mufflers, clamps, gaskets, springs, brackets, and hangers using hand tools such as sockets, wrenches, pliers, and screwdrivers, so that exhaust system performs without leaks and noise levels are within manufacturers' specifications and government regulation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4137: DIAGNOSE AND REPAIR EXHAUST SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4138.0 DIAGNOSE AND REPAIR DRIVELINE

GENERAL PERFORMANCE OBJECTIVES

Diagnose, document, and repair driveline components by performing tests to assess mechanical fitness of components such as primary drives, clutches, transmissions, and final drives, visually and physically inspecting and taking measurements of drivetrain components, identifying and replacing defective components, and reassembling driveline components so that the repaired driveline conforms to manufacturers' specifications.

SKILLS

U4138.01 **Perform a visual and physical inspection** for correct oil quantity and quality in primary housing, transmission, and all final drives using wrenches and screwdrivers, so that all oil quantities and quality meet manufacturers' specifications and symptoms of contamination are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.02 **Inspect clutch activating mechanism** including levers, cables, slave and master cylinders, hydraulic fluids, freeplay adjusters, and internal components, so that excessive freeplay, damaged, worn, or missing levers and cables, and leaking master cylinders are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.03 **Adjust clutch cable/linkage freeplay** using wrenches and screwdrivers so that clutch disengagement is in accordance with manufacturers' specification and maximum clutch life is obtained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.04 **Expose and inspect primary drive components** such as chains, belts, sprockets, gears, pulleys, tensioner, guides, sliders, and compensators using wrenches, sockets, and screwdrivers, so that condition of the components, such as worn or broken teeth, chains, guides, or slides and missing, worn, or loose belts can be determined and the requirement to replace, rebuild, or adjust can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.05 **Reassemble primary drive components** using wrenches, tensioner sockets, and screwdrivers, so that the driveline between the engine crankshaft and the clutch outer drum is complete, components are aligned, and belts/chain tensioner is within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.06 **Disassemble, clean, and visually inspect clutch components** such as clutch basket, hub, friction plates, steel plates, spring, clutch bearings, thrust washer, pressure plate, and spragg plate using wrenches, sockets, screwdrivers, manufacturers' special tools, engine cleaning solvents, wire wheel, and micrometers, so that damaged, worn, or corroded components are identified and decision to repair, replace, or adjust components can be made.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.07 **Reassemble and install clutch assembly, replacing defective components** such as clutch plates, push rods, friction materials, and clutch drums using wrenches, sockets, and manufacturers' special tools, so that slippage is eliminated and smooth operation and maximum clutch life is obtained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.08 **Perform operational tests of kick-starter** so that accurate engagement with the engine is confirmed.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.09 **Replace, lubricate, and reassemble kick-starter components** such as kick- starter lever, pawls, springs, gears, and decompression components using sockets, wrenches, and screwdrivers, so that the kick-starter maintains positive engagement with engine.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.10 **Inspect external shifter mechanism**, so that worn, bent, missing, and loose parts are identified, and requirement to repair or replace is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.11 **Replace, lubricate, and adjust external shifter mechanism** using wrenches, sockets, and screwdrivers, so that shift mechanisms operate smoothly throughout entire range.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.12 **Perform a visual inspection of outer transmission case** so that cracks, holes, leaks, and leaking seals are identified and requirement to repair or replace defective components parts is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.13 **Expose, disassemble, and inspect transmission internal parts** such as gears, shifter forks, shifter drum, splines, torsional dampers, and bearings using wrenches, sockets, screwdrivers, and manufacturers' special tools, so that missing, damaged, corroded, or worn parts can be identified and repair procedure determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.14 **Clean and measure transmission components** such as gears, shafts, shifter forks, shifter drum, shifter shaft, bearings, bushings, and thrust washers using engine cleaning solvents, micrometers, and calipers, so that wear levels of the components can be assessed and a decision to replace or reuse components can be made.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.15 **Perform a visual inspection of inner transmission case** so that cracks and chips are identified and the requirement to repair or replace the casing can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.16 **Lubricate, replace, and reassemble transmission components** into transmission casing using wrenches, sockets, screwdrivers, and manufacturers' special tools, so that components are assembled, aligned, and adjusted in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.17 **Expose and perform a visual inspection of final chain/belt drive** using wrenches and screwdrivers so that components such as chains, sprockets, pulleys, and belts can be examined for wear, damage, or misalignment and the requirement to repair, replace, or realign components can be made.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.18 Disassemble, replace, and adjust chains, sprockets, belts, and pulleys using wrenches, sockets, screwdrivers, chain breakers, and riveters, so that the defective or worn parts in chain/belt final drive are replaced and aligned and the final drive is adjusted to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.19 Inspect and replace front bevel gears using dial indicators, wrenches, sockets, and manufacturers' special tools, so that broken or worn gears are replaced and gear backlash conforms to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.20 Inspect and replace driveshaft assembly components such as splines, dampers, bearings, and shims using wrenches, sockets, dial indicator, feeler gauges, and manufacturers' tools, so that damaged, worn, or corroded components are replaced and driveshaft is adjusted to meet manufacturers' specification.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.21 Disassemble, clean, and inspect final drive housing components such as vent tube, gears, shims, bearings, seals, thrust washers, and splines using wrenches, sockets, screwdrivers, pliers, engine cleaning solvents, micrometer, and calipers, so that damaged or worn parts are identified and the requirement to adjust or replace is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4138.22 Lubricate, replace, reassemble, and adjust final drive components using wrenches, screwdrivers, sockets, pliers, dial indicators, and micrometers, so that gear backlash is adjusted and final drive housing components are aligned in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4138: DIAGNOSE AND REPAIR DRIVELINE		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4139.0 DIAGNOSE AND REPAIR STEERING SYSTEM

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair steering system by inspecting front-end and frame components visually and physically to identify damaged or worn components, disassembling steering head, replacing or repairing defective components such as triple clamps, handle bars, forks, steering head, steering stops, steering head bearings, clamps, axles, wheels, and steering dampener; reassembling, adjusting, and aligning steering components so that steering system moves through its designed radius of steering without binding and excessive play; and ensuring the forks and handle bars are aligned, wheels and tires are true, and vehicle handling characteristics are maintained.

SKILLS

U4139.01 **Inspect front-end and frame components visually and physically**, so that missing or loose nuts and bolts, bent and out-of-round tires and wheels, binding or loose wheel bearings, damaged steering head bearings and bent forks, triple clamps, handle bars, and frame are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4139.02 **Functionally test steering stops and steering lock**, so that front steering assembly can be moved to each of the full steering stop points without binding, catching, or excessive play, the locking mechanism prevents steering assembly from moving in the lock position, and the cables and wiring do not impede front- end operation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4139.03 **Adjust steering head bearing and front wheel bearings** using dial indicator, magnetic base, spring scale, sockets, and torque wrench, so that preload on bearings and end play meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4139.04 **Disassemble and inspect steering head components** such as triple clamps, bearings, races, forks, and handle bars using tools and equipment such as wrenches, sockets, screwdrivers, U-blocks, and dial indicators, so that damaged or worn components can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4139.05 **Repair or replace and assemble steering head components** such as triple clamps, bearings, races, forks, and handle bars by either straightening or replacing triple clamps, handle bars, and forks and replacing damaged bearings or races so that steering geometry is within manufacturers' specifications and components are lubricated and aligned during assembly.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4139.06 **Inspect or replace hydraulic steering friction dampeners** using hand tools such as sockets, wrenches, and screwdrivers so that side-to-side front end (head-snake) oscillation is reduced or eliminated.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4139: DIAGNOSE AND REPAIR STEERING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4140.0 DIAGNOSE AND REPAIR FRONT SUSPENSION

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair front suspension by inspecting and testing fork assembly components, air compressor system, and anti-dive mechanisms, replacing damaged, worn, or defective components and performing routine maintenance to front suspension system so that air and oil are replenished to manufacturers' specifications and fork travel is smooth and controlled throughout its total range.

SKILLS

U4140.01 **Perform a visual inspection** so that oil leaks, bent or worn fork tubes, damaged sliders, missing, loose, or damaged fasteners, galled or pitted fork tubes and damaged anti-dive components are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.02 **Perform operational test of front suspension system hydraulic and pneumatic anti-dive mechanisms** during road test and verify that front suspension travel is smooth and controlled during braking. Confirm operation of hydraulic/pneumatic anti-dive mechanism.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.03 Disassemble, inspect, and measure front fork assembly components including springs, fork inner tubes, fork outer tubes, washers, dampening rods, bushings, dust seals, guards, oil seals, anti-dive mechanism, circlips, shims, and air control system components using hand tools such as sockets, wrenches, screwdrivers, circlip pliers, dial gauge, seal remover, damper rod holder, and graduated cylinder, so that damaged, worn, or defective parts are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.04 Replace or reassemble fork assembly components including springs, fork inner tubes, fork outer tubes, washers, dampening rods, bushings, dust seals, oil seals, guards, anti-dive mechanism, circlips, shims, and air control system components using hand tools such as seal installers, wrenches, sockets, screwdrivers, and circlip pliers, so that oil and air are replenished to manufacturers' specifications, fork assembly is leak free and fork travel is smooth and controlled.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.05 Inspect and functionally test and repair air compressor system and components using hand tools and measuring devices such as test light, multimeter, air pressure gauge, sockets, wrenches, and screwdrivers, so that air compression system is exposed, defective components such as control valve unit, air dryers, lines, compressors, fittings, relays, wiring, switches, filters, solenoids, pressure gauge, and indicator lights are identified, air and oil leaks are isolated, air filter condition is verified, and dryer contamination is identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.06 **Identify and service front suspension system** including replacing air and oil, and adjusting anti-dive and dampening system using graduated cylinder, hand pump, pressure gauge, wrenches, sockets, and screwdrivers, so that oil and air are replenished to manufacturers' specifications and fork travel is smooth and controlled throughout its total range.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4140.07 **Perform suspension sag measurements** by using and adjusting screwdriver, vernier wrenches, tape measure, and sag tool according to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4140: DIAGNOSE AND REPAIR FRONT SUSPENSION		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4141.0 DIAGNOSE AND REPAIR REAR SUSPENSION

GENERAL PERFORMANCE OBJECTIVE

Diagnose and repair rear suspension by inspecting and testing rear suspension components, such as shocks, air lines, springs, mounting hardware, swing arm assembly and rubber dampener; replacing or rebuilding damaged components; adjusting spring and dampener preload; and aligning rear wheel assembly, so that swing arm operates smoothly and wheel travel is controlled throughout its total range.

SKILLS

U4141.01 **Inspect rear suspension components** such as shock(s), air lines, springs, mounting hardware, swing arm, and rubber dampers, so that oil leaks, damaged, bent or broken shafts and springs, loose, worn, or damaged mounting hardware and rubber dampers, and excessive play in swing arm pivot point, rear wheel bearings, and link point bearings are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.02 **Disassemble, clean, and inspect rear suspension components** such as bearings, bushings, seals, shafts, sleeves, linkages, thrust washers, cleave blocks, and spacers using tools and equipment such as bearing drivers, hammer, seal remover, screwdriver, feeler gauge, micrometer, and dial indicator, so that missing, worn, or damaged bearings, races, bushings, and spacers, bent or worn shafts, worn or cracked cleave blocks, and cracked or broken links, swing arm, or points of attachment are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.03 **Inspect and replace or rebuild shocks**, using spring or shock compressor or circlip pliers, graduated cylinder, pin/hook wrench, seal remover, screwdriver, sockets, and nitrogen recharging unit so that worn, damaged, and broken components such as springs, seal, bushings, hydraulic unit, dampener assembly, and shock body are identified, gas reservoir is within manufacturers' specifications, nitrogen and oil leaks are eliminated, and shock travel is smooth and controlled throughout its total range.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.04 **Replace rear suspension components and reassemble** using bearing drivers, seal installers, circlip pliers, torque wrench, plastic hammer, tension gauge, feeler gauge, dial indicator, wrenches, and sockets, so that all components are lubricated during assembly, bearing preload and side play are within manufacturers' specifications, and swing arm operates smoothly throughout its range.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.05 **Perform suspension sag measurements** using screwdriver, vernier wrenches, tape measure, and sag tool and adjusting according to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.06 **Inspect, test, adjust, and replace auto levelling system components** such as sensors or rheostat, control unit, wiring, and relay(s) using multimeters, test light, wrenches, sockets, and screwdrivers, so that defective components are identified, repaired, or replaced and the position of sensor is adjusted, so that auto levelling system maintains vehicle altitude within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4141.07 **Align back wheel to front wheel** using hand tools such as sockets, wrenches, and mechanical and electronic alignment tools, so that both wheels are adjoined to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4141: DIAGNOSE AND REPAIR REAR SUSPENSION		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4142.0 DIAGNOSE AND REPAIR MECHANICAL BRAKING SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair mechanical braking systems by performing tests and taking physical measurements of braking components, identifying and replacing defective and worn braking components, and reassembling mechanical brake components, so that safe and efficient braking capability is maintained.

SKILLS

U4142.01 Perform a visual and an operational inspection of brake levers, cables, and linkages so that missing, worn, or damaged brake-actuating components are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.02 Lubricate, adjust, and replace linkages, cables, and levers using wrenches so that brake-actuating mechanisms operate smoothly and friction material fully contacts rotor or drum.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.03 Remove wheels using wrenches, sockets, and pliers, so that brake components such as drums, rotors, friction material, and brake hardware are exposed for inspection and repair.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.04 Remove, clean, and perform a visual inspections of internal and external brake components such as calipers, drums, rotors, friction materials, springs, washers, and cotter pins using wrenches, sockets, screwdrivers, pliers, and engine cleaning solvent, so that worn, corroded, damaged, or missing components are identified and the requirement to replace, repair, or adjust can be determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.05 Measure brake system components such as drums, rotors, and friction material using micrometer, calipers, and dial indicators, so that worn, out-of-true, and out- of-round components are identified and the decision to resurface, replace, repair, or adjust components can be made.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.06 Rebuild and replace mechanical calipers using wrenches, screwdrivers, micrometer, and reamers so that calipers' pitting and seizing are eliminated and braking efficiency is restored.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.07 **Replace friction material on brake shoes in calipers** using riveting, bonding, and grinding equipment so that friction material is within manufacturers' wear limits and braking efficiency is restored to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.08 **Resurface brake drums and discs** using brake lathes so that drum and disc surfaces are free of pits, abrasion, and corrosion, and braking efficiency is restored.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.09 **Replace and adjust drums, rotors, and friction materials on wheels** using wrenches, pliers, and screwdrivers, so that components are firmly attached to the wheels, brake actuating cables are secured, brakes are adjusted to manufacturers' specifications, and braking efficiency is restored.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4142.10 **Reassemble, lubricate, and adjust mechanical braking systems** using hand tools such as wrenches, sockets, pliers, and manufacturers' recommended lubricants, so that as brakes are applied, they function smoothly and evenly without vibration, noise, pulling, or binding.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4142: DIAGNOSE AND REPAIR MECHANICAL BRAKING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4143.0 DIAGNOSE AND REPAIR HYDRAULIC BRAKING SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair hydraulic braking systems by performing operational tests and physical inspections, taking physical measurement of braking components, identifying and replacing defective and worn braking components, and reassembling hydraulic brakes, so that safe and efficient braking performance is restored.

SKILLS

U4143.01 Perform a visual and physical inspection of hoses, lines, fittings, master cylinders, rotors, calipers, and levers for wear, breakage, cracks, and fluid leaks, and check quantity, type, and quality of brake fluids, using screwdriver, wrenches, dial gauges, and micrometers so that worn or damaged components are identified and brake fluid quantity, type, and quality are in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.02 Remove, rebuild, or replace master cylinders, wheel cylinders, and calipers using tools such as screwdrivers, wrenches, brake cylinder hones, and pliers so that fluid leaks are eliminated and hydraulic brake system efficiency is restored to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.03 Remove and replace brake fluid proportioning valve using wrenches so that brake fluid pressure to brake components is metered in accordance with manufacturers' specification.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.04 Identify the requirement of care and attention to the usage or spillage of brake fluid (corrosive) to prevent damage to painted or plastic components.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.05 Remove and replace brake lines, banjo bolts, and crush washers using wrenches, so that brake fluid leaks are eliminated, and cracked, stretched, and weathered brake lines and attaching hardware are replaced.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.06 Measure and inspect brake drums and discs using micrometers, dial gauges, and hand tools, so that drum and rotor surfaces are free of abrasions, pits, and corrosion, and braking efficiency is restored.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.07 **Measure and replace disc brake pads and friction material on brake shoes** using hand tools and micrometers so that friction material is within manufacturers' prescribed wear limits and not contaminated with brake fluid or foreign material and replacement procedures are in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.08 **Inspect and test anti-lock braking system** using multimeters, probes, and manufacturers' specialized test equipment so that defective or damaged components such as metering valves, load proportioning valves, anti-lock actuators, microprocessors, and wheel sensors are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.09 **Replace and adjust anti-lock braking system components** such as wheel sensors, metering valves, anti-lock actuators, load proportioning valves, and microprocessors so that anti-lock braking system functions in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.10 **Flush, replenish, and bleed brake fluids** using screwdrivers, wrenches, and vacuum pump, so that air does not remain in the hydraulic braking system and braking efficiency is restored to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4143.11 **Adjust lever freeplay at master cylinder** using wrenches and screwdrivers so that lever freeplay is within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4143: DIAGNOSE AND REPAIR HYDRAULIC BRAKING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4144.0 DIAGNOSE AND REPAIR TIRES AND WHEELS

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair tires and wheels by visually and physically inspecting for external damage such as cuts, nicks, and puncture holes, wheel run-out, bent or broken spokes and axles, and worn or damaged wheel bearings so that the wheel assembly may be returned to a safe operating condition.

SKILLS

U4144.01 **Perform a visual and physical inspection of tires** for punctures, cracks, foreign matter, uneven tread wear, correct size and air pressure, incorrect fitment, and correct rotational direction, using a tire pressure gauge, waterbath, and tread depth gauge, so that leaks and punctures are isolated and the requirement to adjust, repair, or replace tire can be made.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.02 **Inspect and test wheels** for broken or cracked spokes and incorrect spoke tension, and bent, cracked, or warped rims, using dial indicators and wheel truing jig, so that damaged wheel components are identified and the requirement to replace or adjust is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.03 **Remove, clean, and inspect internal wheel and hub components** such as bearings and seals, using wrenches, sockets, pliers, and cleaning solvents so that worn or damaged parts are identified and the requirement to replace is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.04 **Lubricate and reassemble hub components** using tools such as bearing installation tools and seal drivers so that hub assembly is restored to manufacturers' specification.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.05 **Clean and inspect tire and rim components**, including interior of rim, tire, tube, rim tape, spoke nipples, and tire valve, using tire-changing equipment, tire irons, wrenches, and water bath so that cracks, leaks, tears, punctures, corrosion, and abrasions are identified and requirement to repair or replace components is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.06 **Remove, replace, and adjust tension of spokes** using spoke wrenches, cutter, wheel truing jig, and dial indicator, so that bent or broken spokes are replaced, and tensioned and rim run-out is adjusted to manufacturer's specification.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.07 **Install tire on rim** using tire-mounting equipment, tire-mounting lubricants, and rim protectors so that tire air pressure is maintained at tire manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.08 **Balance wheel assembly** using tire balancer and wheel weights so that tire/wheel vibration is eliminated.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4144.09 **Replace tire/wheel assembly** using torque wrench, sockets, and pliers so that the tire is aligned in suspension unit and axle is torqued to manufacturers' specification.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4144: DIAGNOSE AND REPAIR TIRES AND WHEELS		
Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature

U4145.0 DIAGNOSE AND REPAIR CHARGING SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair electrical charging system components such as alternating current generator, regulator, rectifier and related wiring, and connectors using multimeters, armature testers, and specialized manufacturers' diagnostic tools, so that the electrical systems output meets manufacturers' specifications.

SKILLS

U4145.01 Perform a visual inspection of wiring connectors and fuses so that loose, corroded, or abraded wiring or connections, burned fuses, and incorrect routing are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4145.02 Inspect, clean, identify, and test battery using load tester, voltmeter, and hydrometer, so that the level of charging and cranking ability is established, posts and connectors are clean, and connections are secure.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4145.03 **Charge or replace battery** using correct battery charger, hydrometer, and hand tools so that battery achieves and maintains a fully charged state and meets manufacturers' specified voltage and amperage/hour rating.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4145.04 **Test alternating current generator** using voltmeter, ammeter, ohmmeter, and armature testers, so that output, opens, and short circuits are identified, grounds in windings are identified, measured readings are matched to manufacturers' specifications, and requirement to repair or replace components is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4145.05 **Repair wiring and connections** using wire cutting and stripping tools, wiring connector crimping tools, soldering equipment, and electrical tape, so that shorts, grounds, and abrasions are eliminated and wiring is returned to original condition.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4145.06 **Test regulator/rectifier** using voltmeter, ohmmeter, ammeter, and tachometer, so that status of current regulating/rectifying system is assessed, defective components identified, and repair procedures determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4145: DIAGNOSE AND REPAIR CHARGING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4146.0 DIAGNOSE AND REPAIR ELECTRIC STARTING SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair electric starting system by performing tests to assess electrical and mechanical condition of starting system components, such as battery, ignition switch, starter switch, starter motor solenoids, and soldering and replacing defective and worn components so that starting system operates in accordance with manufacturers' service manual.

SKILLS

U4146.01 Inspect and clean battery, power, and ground wiring and connectors so that parts and connectors are clean, terminal connections are secure, electrolyte levels are within battery-specified levels (if applicable), and battery voltage levels, cracked cases, and sulphated or deteriorating plates are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.02 Identify battery, type 1 charges, and load test, and replace battery using load tester, hydrometer, battery charger, voltmeter, sockets, and wrenches, so that battery condition is verified, requirement for replacement is determined, and battery meets voltage and amperage/hour rating.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.03 **Perform functional tests of starting system components** such as ignition switches, starter switches, kill switches, neutral switches, clutch switches, side stand switches, solenoids, relays, and starter motors using multimeters and test lights, so that the components requiring repair, replacement, or adjustment are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.04 **Repair or replace switches, solenoids, and starter relays** using screwdrivers, contact cleaners, wrenches, and soldering equipment so that components' performance is in accordance with manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.05 **Disassemble, clean, and measure starter motor components** such as armatures, field coils, brushes, bearings, seals, and gears using solvents, calipers, and multimeters so that defective and worn components are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.06 **Repair or replace starter motor components** using hand tools such as wrenches, sockets, screwdrivers, and soldering equipment, so that starter motor functions under load and provides necessary torque to turn over engine.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.07 **Replace mechanical starter drive components** such as gears, sprockets, chains, starter clutches, bushings, bearings, shims, washers, and springs using hand tools such as wrenches, micrometers, sockets, screwdrivers, and pliers so that all components are functional and all clearances meet manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4146.08 **Assemble and lubricate starter system components** using manufacturers' specified lubricants, wrenches, socket, screwdriver, and pliers so that starting system operates as indicated in manufacturers' service manual.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4146: DIAGNOSE AND REPAIR ELECTRIC STARTING SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4147.0 DIAGNOSE AND REPAIR IGNITION SYSTEM

GENERAL PERFORMANCE OBJECTIVES

Identify, diagnose, and repair ignition systems by performing tests to assess condition of ignition system components, and isolating and replacing defective components, so that ignition system operates in accordance with manufacturers' service manual.

SKILLS

U4147.01 Inspect and clean battery, power, and ground wiring and connectors, so that posts and connectors are clean, terminal connections are secure, electrolyte levels are within battery-specified levels, and cracked cases and sulphated or deteriorating plates are identified (if applicable).

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.02 Charge, load test, and replace battery using load tester, hydrometer, battery charger, voltmeter, sockets, and wrenches, so that battery condition is verified, requirement for replacement is determined, and battery meets manufacturer's specified amperage/hour rating and voltage (if applicable).

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.03 Identify and test power source to ignition including fuses, circuit breakers, kill and safety switches, relays, and related wiring using a test light or multimeter so that circuit opens and shorts are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.04 **Test for spark at plug(s)** using hand tools such as sockets, wrenches, and screwdrivers so that defective spark plugs are identified and replaced or further assessment of ignition system is identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.05 **Test and replace high-tension leads and spark plug cap** using multimeter, sockets, wrenches, and screwdrivers, so that shorts, opens, and high resistance in caps or leads are identified and continuity is maintained.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.06 **Test and replace ignition coils** using test light, coil tester, sockets, wrenches, and multimeter so that coil performance/power test is within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.07 **Test and repair wiring and connectors** using equipment such as a test light, multimeter, terminal tools, soldering gun, heat gun, and heat shrink material, so that open or shorted circuit can be identified and corrected and circuit continuity is ensured.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.08 Inspect and replace points and condenser using feeler gauge, dwell ohmmeter, wrenches, multimeter, condenser tester, and screwdriver, so that point gap is adjusted within manufacturers' specifications, point contact surfaces are clean and aligned and not pitted, and condenser capacitance is within manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.09 Inspect, lubricate, or replace ignition advance system and components using wrenches, sockets, screwdrivers, pliers, and meters so that the ignition systems function as per manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.10 Adjust timing of breaker-point ignition system using strobe light, dial gauge, feeler gauge, dwell ohmmeter, points checker, and multimeter, so that the ignition timing is within manufacturers' specifications

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.11 Adjust air gap on pick-up coil for electronic ignition using feeler gauge, screwdrivers, and sockets, so that gap meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.12 **Test and replace pick-up coil on electronic ignition** using multimeter, sockets, wrenches, screwdriver, flywheel puller, soldering gun, and heat shrink material, so that specific resistance or voltage of coils is in accordance with manufacturers' specification and related wiring is free of shorts and opens.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.13 **Test and replace ignition module and related wiring** using ignition module tester, multimeter, sockets, wrenches, pliers, screwdrivers, terminal tools, soldering equipment, heat shrink material, and connectors, so that the current flowing to the primary circuit of the ignition coils is controlled.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4147.14 **Adjust and clean timing of electronic ignition system** using strobe light, dial gauge, wrenches, sockets, and screwdrivers, so that ignition timing meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4147: DIAGNOSE AND REPAIR IGNITION SYSTEM		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4148.0 DIAGNOSE AND REPAIR ELECTRICAL ANCILLARIES

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair electrical ancillaries such as headlights, tail lights, turn signals, indicator lights, radios, horns, and air compressors by testing circuits and components using tools, such as ohmmeter, voltmeter, and test lights, repairing wiring and connections, and replacing electrical components using screwdrivers, sockets, soldering guns, solder, and electrical connector tools, so that electrical accessories function according to manufacturers' specifications and continuity of ancillary circuits is maintained.

SKILLS

U4148.01 Inspect and clean battery, power, and ground wiring and connectors so that posts and connectors are clean, terminal connections are secure, electrolyte levels are within battery-specified levels, cracked cases and sulphated or deteriorating plates are identified, and battery capacity meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.02 Charge, load test, and replace batteries using load testers, hydrometers, battery chargers, voltmeters, sockets, and wrenches, so that battery condition is verified, requirement for battery replacement is determined, and batteries meet specified amperage/hour rating.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.03 Perform a visual and functional tests of fuses, circuit breakers, and fusible links using multimeters and test lights so that defective or damaged parts are identified and replaced.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.04 Isolate and repair opens, shorts, and grounds in wiring and connectors using multimeters, electrical connector tools, wires, solder, shrink tube, and electrical tape, so that problems are isolated and circuit continuity is established.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.05 Test ancillary operating switches using tools, such as voltmeters, ohmmeters, and test lights, so that operation is in accordance with manufacturers' service manuals and wiring diagrams.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.06 Repair or replace accessory operating switches using screwdrivers, pliers, solder, electrical connector tools, and tape, so that repaired or replaced switches will make a positive connection and accessories function as specified in manufacturers' operating manual.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4148.07 **Test and replace defective ancillaries**, such as headlights, tail lights, turn signals, indicator lights, horns, radios, and air compressors using multimeters, hand tools, and pressure gauges, so that defective components are identified, the required repair or replacement is made, and the accessories function as specified in manufacturers' operating manual.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4148: DIAGNOSE AND REPAIR ELECTRICAL ANCILLARIES		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4149.0 DIAGNOSE AND REPAIR CHASSIS AND CHASSIS COMPONENTS

GENERAL PERFORMANCE OBJECTIVES

Diagnose chassis and components by performing visual inspections, taking measurements of components such as frame, motor mounts, foot pegs, and floor boards and repairing or replacing damaged, worn, or missing parts using hand tools, so that the motorcycle frame and related components are returned to manufacturers' specifications.

SKILLS

U4149.01 **Perform a visual inspection of chassis components** such as frame, motor mounts, helm joints, foot pegs, floor boards, swing arm mounts, transmission mounts, frame/suspension alignment, prop, and centre stands so that missing, loose, or damaged parts may be identified and requirement to repair or replace determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4149.02 **Perform functional test of frame and suspension alignment** using tools such as frame jig and tape measures so that measurements can be compared with manufacturers' specifications so misaligned frames are identified and requirement to repair or replace is determined.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4149.03 **Replace chassis and chassis components** such as frame, foot pegs, fairing mounts, and cooler mounts using hydraulic presses and hand tools so that all components are mounted securely and aligned to manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4149: DIAGNOSE AND REPAIR CHASSIS AND CHASSIS COMPONENTS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4150.0 SERVICE BODY PARTS

GENERAL PERFORMANCE OBJECTIVES

Service body parts by visually inspecting and identifying missing, loose, and damaged parts, so that they may be removed, replaced, or repaired and reinstalled, and motorcycle is returned to original condition and components are firmly secured.

SKILLS

U4150.01 **Perform a visual inspection of body parts** such as fenders, gas tanks, fairing, body panels, and final drive covers so that chemically damaged, physically damaged, missing, or loose parts are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4150.02 **Disassemble and correctly store body parts** using tools, wrenches, sockets, screwdrivers, and Allen keys so that damaged components are removed, repaired, or replaced.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4150.03 **Perform a visual inspection and identify body part hardware** such as latching and locking devices, hinges, seals, and fasteners so that defective components are identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4150.04 **Repair or replace body part hardware**, such as latching and locking devices, hinges, seals, and fasteners using screwdrivers, wrenches, sockets, and adhesives, so that body hardware is returned to original condition, leaks are eliminated, and latching devices operate securely.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4150.05 **Repair or replace body parts** using tools and equipment, such as plastic welder, glues, adhesives, sanders, and surface-refinishing equipment, so that body parts are returned to original condition.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4150.06 **Replace body parts** using wrenches, screwdrivers, and sockets so that body parts are secured firmly and aligned.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4150: SERVICE BODY PARTS		
Date Completed (mm/dd/yy)	**Sponsor Name (Print)**	**Sponsor Signature**

U4151.0 DIAGNOSE AND REPAIR SIDECAR

GENERAL PERFORMANCE OBJECTIVES

Diagnose and repair sidecar by performing tests to assess mechanical, suspension, and brake systems, and identifying worn or defective components so that the repaired sidecar operates according to manufacturers' specifications.

SKILLS

U4151.01 Measure and perform a visual inspection of sidecar unit, frame, mountings, and alignment using inclinometer, measuring tape, and straight edges so that defects such as loose hardware, bent or broken frames, loose sidecar body mounts, and loose, misadjusted, or misaligned sidecar wheels can be identified.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4151.02 Perform functional tests and repairs to sidecar braking systems using wrenches, sockets, screwdrivers, brake cylinder hones, and vacuum pumps, so that defective braking system components such as hoses, cables, wheel cylinders, brake shoes, brake clips, drums, and rotors are identified, and braking systems are restored to safe and efficient operation.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4151.03 Align sidecars to motorcycle frame such as toe-in, lean in, mounting, wheel lead, and vehicle lead using parallel bars, inclinometer, wrenches, sockets, and plastic mallet, so that alignment meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4151.04 **Repair or replace sidecar components**, such as broken or bent frames, suspension springs, sidecar mounting hardware, wheels, and axles, using wrenches, sockets, screwdrivers, and pliers, so that vehicles are reassembled, attached to the motorcycle, and aligned.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

U4151.05 **Reassemble, lubricate, and adjust sidecar components** using parallel bars, inclinometer, wrenches, and screwdrivers so that sidecar alignment meets manufacturers' specifications.

(mm/dd/yy)	Journeyperson Signature
(mm/dd/yy)	Apprentice Signature

SPONSOR CONFIRMATION FOR U4151: DIAGNOSE AND REPAIR SIDECAR		
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.

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: 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.

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.

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.

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 Log Book 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
U4130.0	PROTECT SELF AND OTHERS	
U4131.0	APPLY GENERAL WORK PRACTICES AND PROCEDURES	
U4132.0	PERFORM PRELIMINARY DIAGNOSIS	
U4133.0	DIAGNOSE AND REPAIR TWO-STROKE AND FOUR-STROKE ENGINE (MECHANICAL)	
U4134.0	DIAGNOSE AND REPAIR FUEL CARBURATION SYSTEM	
U4135.0	DIAGNOSE AND REPAIR FUEL-INJECTION SYSTEM	
U4136.0	DIAGNOSE AND REPAIR COOLING SYSTEM	
U4137.0	DIAGNOSE AND REPAIR EXHAUST SYSTEM	
U4138.0	DIAGNOSE AND REPAIR DRIVELINE	
U4139.0	DIAGNOSE AND REPAIR STEERING SYSTEM	
U4140.0	DIAGNOSE AND REPAIR FRONT SUSPENSION	
U4141.0	DIAGNOSE AND REPAIR REAR SUSPENSION	
U4142.0	DIAGNOSE AND REPAIR MECHANICAL BRAKING SYSTEM	
U4143.0	DIAGNOSE AND REPAIR HYDRAULIC BRAKING SYSTEM	
U4144.0	DIAGNOSE AND REPAIR TIRES AND WHEELS	
U4145.0	DIAGNOSE AND REPAIR CHARGING SYSTEM	
U4146.0	DIAGNOSE AND REPAIR ELECTRIC STARTING SYSTEM	
U4147.0	DIAGNOSE AND REPAIR IGNITION SYSTEM	
U4148.0	DIAGNOSE AND REPAIR ELECTRICAL ANCILLARIES	
U4149.0	DIAGNOSE AND REPAIR CHASSIS AND CHASSIS COMPONENTS	
U4150.0	SERVICE BODY PARTS	
U4151.0	DIAGNOSE AND REPAIR SIDECAR	

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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