British Columbia Class 1 Mandatory Entry-Level Training (MELT) Program

Course Standards and Curriculum Framework

Insurance Corporation of British Columbia

June 25, 2021

This curriculum standard and framework are based on the Canadian National Safety Code (NSC) Standard 16 for entry-level training of Class 1 drivers. The purpose of this standard is to provide the British Columbia commercial driver training industry with guiding principles and core training requirements to ensure that new applicants for a Class 1 driver's licence possess the basic knowledge and driving skills to safely operate commercial vehicles on Canadian roads.

While some of the elements relate to work environments, this standard is not intended to focus on industry specific training and knowledge related to various industry sectors or all employment environments. This standard targets training of new commercial drivers with the entry-level core skills foundational to operating semi-tractor trailer vehicle combinations, keeping in mind that Class 1 drivers may operate other commercial vehicle configurations.

On-going professional level training and learning is necessary during the career of a professional commercial driver. It is expected that employers will provide new Class 1 commercial drivers with industry and job-specific training to orient them to any unique vehicle configurations or cargo securement requirements that are necessary for business operations within each sector.

Contents

Course standards

Learning environments

Course delivery will occur in three learning environments.

1. In-class — refers to an educational setting including classroom, digital or blended instruction facilitated by an instructor, and if self-directed, through a Learning Management System (LMS) as described below.

2. In-yard (around the vehicle) — occurs around the vehicle when the vehicle is not moving other than small movements needed to complete a task in a safe location (e.g., vehicle inspection or chain up).

3. In-cab (behind the wheel) activities include:
   - off-road backing and coupling manoeuvres — These activities may occur in a yard or parking lot, or in a safe and legal location at the roadside.
   - on-road driving along — The student is driving the vehicle on streets and highways. This includes short instructor driving demonstrations, where needed.

Each of these learning environments lends itself to different methods of instruction.

Physical and virtual simulators may be used as a supplemental learning tool for in-class instruction with an instructor present, but cannot be used to replace in-cab or in-yard hours.

Digital delivery methods

All digital learning delivery methods must be reviewed and approved by ICBC. Both the driver training school and ICBC must have the ability to verify the identity of the student who has participated in either types of digital delivery method noted below.

The following are acceptable methods for digital delivery of the in-class portion of MELT:

A Learning Management System (LMS) — Self-paced, self-directed learning units. The software manages the administration, documentation, tracking, grading, reporting, and delivery of training as opposed to a live instructor. Any LMS method that is used must have the capability to verify the identity of the person to the satisfaction of ICBC to ensure that the person who is completing each self-directed unit is the person enrolled in the Class 1 MELT course.

Up to 50% of the theoretical hours may be offered as self-paced, self-directed learning through an LMS. The remaining 50% must be conducted either in person or

online through a live virtual classroom as described below and must meet the *Instructional Methods* requirements to balance lectures with interactive, experiential and application focused activities. The final written assessment must be conducted in-person.

A virtual classroom — A course that is delivered in real time by a live instructor using a video conferencing software. Any video conferencing software may be used, provided the software meets the requirements stated in the *Requirements for online learning document*.

- 100% of the theory hours may be offered live through a virtual classroom, except for the final assessment which must be conducted in person.
- The school must visually verify the identity of the person at the beginning of each virtual classroom session.

Instructional time

Instructional hours are calculated at 60 minutes. Break time is not included in required hours.

Observation time in-cab where one student is observing another student driving does not count towards minimum required hours.

Assessments within a lesson to check for knowledge, skill, ability and attitude are included in the time allotment.

Time taking an ICBC road test or vehicle/air brake pre-trip assessment are not included in the minimum required course hours.

Instruction received before enrolling in a MELT course does not count toward minimum required course hours or replace required content.

Course delivery must adhere to the following time requirements and

- For in-class instruction, virtual classroom instruction (live), and in-yard instruction, or combination, provide a minimum 15 minute break after two hours of instruction, or a minimum 10 minute break after 90 minutes of instruction.

- No more than seven hours of in-classroom instruction in a day (plus breaks). Instructors may extend learning beyond seven hours through the use of homework assignments that do not count towards required course time.

- No more than four hours of virtual live video-conferencing in a day (plus breaks).

- No more than seven hours per day of theory hours may be taken (logged on)

when using a Learning Management System (LMS) – Self-paced, self-directed learning units.

- No more than six hours of in-yard activities in a day (not including breaks).
- For any combination of in-class instruction (virtual or in-person), on-road, off-road, or in-yard instruction, provide no more than eight hours of combined instruction in a day (not including breaks). For example:
  - 4 hours in-class, 1 hour in-yard, 3 hours in-cab
  - 2 hours in-yard, 2 hours off-road, 2 hours on-road, 2 hours virtual learning.
- In-cab (on-road and off-road manoeuvers) hours cannot exceed more than four hours per day (plus breaks), except up to 20 hours of the total on-road and off-road hours in the course may be used to extend a single day up to 10 hours (not including breaks), to accommodate highway and mountain driving and to accustom the student to driving longer distances and longer days.

  These longer days may only be provided where the student has achieved the knowledge, ability, and stamina to complete the lessons. The instructor must provide reasonable stretch and meal breaks throughout the duration of the day and carefully monitor the student's fatigue level.
- This time includes when an instructor is demonstrating a driving manoeuver and when the student is behind-the-wheel operating the vehicle.

Flexible time

Six hours of flexible time is included in the course to help instructors meet the needs of their students. This time is not optional. It must be used for practical training (in-yard, off-road, on-road). For example, an instructor could use some of the six hours for extra vehicle inspection practice and some for extra backing practice, or any other combination of practical training, or to prepare prior to the ICBC Class 1 road test.

The instructor should take into account the student's input into how these flexible hours may be used, by checking in with the student on what skills they are less confident with and appropriately communicating to the student where there are obvious skill deficiencies that could be bolstered during flexible time.

Attendance

The Driver Training Instructor must record the minimum mandatory training hours provided to the student, in accordance with the *Hours of instruction by module* table on page 14 of this document, using ICBC form MV7604 – Student Course Attendance (or other similar form approved by the Manager of ICBC Driver Training Industry Support). Student attendance records must be retained by the Driver Training School.

Instructional methods

Face-to-face and web-conferencing

A maximum of 50% of face-to-face in-class or web-conference time may be lecture. The rest of the in-class time must be interactive, experiential and application focused.

- Interactive learning involves students interacting with each other through discussion groups and other interactive activities.
- Experiential learning means that students are learning through the experience of doing and reflecting on what they are learning.
- Application focused learning involves exercises that help students learn how to apply and extend the knowledge that they have pre-learned.

Self-paced LMS

Up to 50% of the estimated time spent on the LMS may be reading or listening to information (lecture), the remaining time must include activities to have the student engage with the content and apply learning such as scenario analysis, action animation, games, pop-up boxes, quizzes, videos, and so on.

Integration of theoretical and practical training

The course must be planned and scheduled to ensure that there is integration between theoretical and practical learning to support learning and development. Front-loading of all the theory is not allowed.

Class size

In-class: a maximum of 15 students will be permitted.

Online virtual classroom instruction (e.g., live video-conference): a maximum of 10 students will be permitted to participate at one time.

In-yard: a maximum of four students will be permitted per instructor.

- If the instructor is demonstrating or giving direct instruction to a student while others observe, all students are credited with the time.
- All students must be given equitable time for personal instruction from the instructor and hands on in-yard practice.
- The majority of the student’s minimum mandatory in-yard instruction hours must be hands-on.
- Students practicing, alone or together, without the instructor present, are not credited with in-yard time.

In-cab: a maximum of two students will be permitted per instructor and vehicle.

- Each person in the vehicle must be seated in a legal seat with legal seatbelt.
- A student may observe another student who is behind-the-wheel; however, this observation time is not credited toward the mandatory in-cab hours.

Course time frame

The course must be completed within 365 days from the course start date that the student enrolled in. If a student enrols in a course, but signs into the online learning platform on a later date, the 365 days will start from the course start date set by the driver training school at the time of enrolment. A student may not complete the course in less than 30 days from the course start date.

Advanced standing

Drivers must successfully complete the full 140 Class 1 MELT course hours to be eligible to be issued an MV2970 - Class 1 MELT Declaration of Completion (DoC) by the driver training school. Commercial driver training course work taken in another jurisdiction, whether fully completed or partially completed, is non-transferable.

Prior Class 1 driver training course work completed in B.C. will not count toward the B.C. Class 1 MELT course hours. Those holding a B.C. commercial class driver's licence 2, 3 or 4 (or similar driver's licence class) will not be provided recognition with any advanced standing credit toward the completion of the Class 1 MELT course mandatory hours.

Student assessment requirements

Practical assessment material will be provided to the driver training school and must be used by the driver training instructor assigned to assess a student. A student must sign the assessment form at the start of the assessment(s), and the driver training instructor must sign once they have conducted and marked the assessment(s). In the event that a student is only assessed on some of the tasks listed on an assessment form at any one given time, the driver training instructor must use a new form for any remaining assessment tasks so that the student may sign at the start of these assessments.

The driver training school must retain in its student records, ***all*** completed student assessment forms, including unsuccessful attempts. The driver training school must record all passed practical and theoretical assessments on the ICBC form MV7604A – Class 1 MELT Student Assessment Results. Along with meeting all course hours and content requirements, students must pass the assessments listed below twice to be issued an ICBC MV2970 - Class 1 MELT Declaration of Completion (DoC).

Assessments of the same task and type (e.g., offset backing) may be conducted on different days, or in different locations if conducted on the same day. Class 1 MELT practical assessments required to be conducted by the driver training school are:

1. MV7604B – Highway and Mountain Driving
2. MV7604C – Vehicle Pre-trip Inspection (*includes air brake pre-trip inspection*)
3. MV7604E – Coupling/Uncoupling
4. MV7604F – Chain-up, Fifth Wheel Slide, Trailer Axle Slide
5. MV7604G – Backing *(includes straight-line, alley-dock and off-set backing*
6. MV7604H – Basic and Urban Driving

A final written assessment with an overall minimum pass rate of 80% is required. Written assessment materials will be provided by ICBC and invigilated by the driver training school facility with a Class 1 instructor present, or another employee or agent of the driver training school approved by the driver training school to invigilate.

The intent of the Class 1 MELT theoretical and practical assessments are to provide an indicator to the student and the instructor of how well the student is progressing, and to identify any gaps in skills and knowledge that need to be addressed. The Driver Training School must use the theoretical assessment forms provided by ICBC. It is expected that a student who attends and completes the minimum mandatory number of MELT course hours in each module should be able to reasonably demonstrate the skills, knowledge and ability required in each assessment to be issued a Class 1 MELT DoC by the driver training school.

Class 1 MELT Declaration of Completion

A driver training school must be approved to deliver the Class 1 MELT course, and will be required to issue an MV2970 - Class 1 MELT Declaration of Completion (DoC) to each student who has met the assessment requirements and successfully completed the course. ICBC will provide the assessment and MELT DoC forms to driver training schools approved to deliver the Class 1 MELT course. The driver training school must provide the *Student copy* portion of the MELT DoC to the student, the *ICBC copy* portion to the corporation, and retain its *School copy* portion on record for 6 years. A driver training school must mail the *ICBC copy* of the MELT DoC within 10 business days of issuance to:

ICBC Driver Training Industry Support
PO Box 3750
Victoria BC V8W 3Y5

The student must complete B.C.’s MELT course requirement and be issued the DoC by the driver training school within 365 days of the B.C. Class 1 MELT course start date. The student may book the ICBC Class 1 road test prior to MELT course completion, but cannot attempt the road test until the MELT DoC is received by ICBC and entered into the corporation’s records. For this reason, the student must always bring their

Student copy of the MELT DoC to ICBC prior to attempting the Class 1 road test so that the form may be verified on system. It is acceptable for the student to bring their copy of the MELT DoC to the driver licensing office at the time they are set up for their Class 1 road test, or they may bring it in prior. If a driver training school issues the MELT DoC to a student in error, the driver training school must notify ICBC Driver Training Industry Support as soon as possible after learning of the error.

Instructor requirements

Instructors teaching the theoretical classroom or online portion of the MELT course must hold a Class 1 driver training instructor's licence with an Approved Instructor Theory (AIT) designation and a MELT designation.

Instructors teaching the practical portions of the MELT course must hold a Class 1 driver training instructor's licence with a practical designation and MELT designation.

Facility requirements

Facilities where training is to take place must meet all Occupational Health and Safety Regulations, any Provincial Health orders in effect at the time, applicable municipal by-laws, and all classroom and training vehicle requirements.

Classroom requirements

Driver training schools must provide an appropriate classroom in which to deliver in-class sessions. Classroom facilities may be owned, leased, borrowed or rented. Classroom requirements include:

- accessible emergency exits
- electrical outlets conveniently located and available
- adequate lighting, heating/cooling systems and proper ventilation
- clean washroom facilities
- enough space to comfortably accommodate the number of expected students
- sufficient seating and writing surfaces for the class
- audio-visual equipment for presentations and videos. Screen size must be large enough for all students to clearly see what is presented, and audio must be clear and loud enough for all students to clearly hear.
- a space that is used exclusively as a classroom while a class is in session.
- a minimum of 1.5 square m. (16.15 square ft.) of floor space for each student in a classroom.
- a minimum of 4 square m. (43.06 square ft.) of floor space for each instructor in a classroom.

Training vehicle requirements

Training must be completed using a tractor and semi-trailer vehicle combination or B-train with the following configuration:

- Combination vehicle with a loaded weight of at least 32,000 kg GVW.
- Tractor and trailer must each have a valid inspection certificate.
- Full air brake system on both tractor and trailer(s).
- Minimum tandem axle tractor and a tandem axle trailer(s).
- 5th wheel coupling device with a sliding mechanism.
- Single trailer at least 14.63 m (48 ft.) long, set at a minimum distance of 12.5 m (41 ft.) measured from the kingpin to the centre of the rear axle.

Transmissions used for training

At the discretion of the student, up to 10 hours of practical on-road training may take place in a vehicle with an automatic or automated transmission. However, the remainder of the training must take place in a vehicle with a manual transmission. Manual transmission vehicles must have a minimum 13-speed transmission.

The student may choose to attempt the ICBC Class 1 road test using a minimum manual 13-speed transmission or automatic/automated transmission vehicle. If a student qualifies on the ICBC Class 1 road test with an automatic or automated transmission vehicle, they will be issued a restricted driver's licence that prohibits driving Class 1 commercial vehicles with a manual transmission.

On-road driving requirements and restrictions

On-road driving time must include loaded and unloaded trailers, as well as bobtailing. The following chart lists minimum hours that must be spent in each vehicle configuration on-road. In any case, on-road driving must not be less than 50 hours. The course includes an additional 6 hours of flexible time to meet the needs of individual students, in which case total time on-road may extend up to 56 hours.

Minimum required on-road hours	
Loaded trailer	38
Bobtail	4
Unloaded trailer	4
*Student/instructor choice	4
Total	50

*Up to 4 hours may be taught using a pintle-hitch truck and trailer.

Modules and main learning outcomes

1. Overview of the trucking industry
1.1 Describe the requirements for employers and workers to comply with government regulations and develop standards.
1.2 Effectively interact and speak with coworkers, supervisors, customers, suppliers, enforcement officials and the general public.
1.3 Explain the importance of being "fit for work", maintaining a healthy lifestyle, and balancing personal and work life.
1.4 Explain the purpose, fundamental structure and basic content of regulations that apply to commercial vehicle operations.
1.5 Describe how to recognize when human trafficking may be occurring and how to report it.
2. Vehicle components and systems
2.1 Operate commercial vehicle systems and controls.
3. Driving Techniques
3.1 Prepare and start to drive a commercial vehicle.
3.2 Comply with operational regulations that apply to commercial vehicles.
3.3 Operate a commercial vehicle in a safe manner and perform basic driving manoeuvres.
3.4 Use fuel-efficient driving habits.
4. Professional Driving Habits
4.1 Apply defensive and cooperative driving techniques.
4.2 Handle emergency incidents in a professional manner.
5. Off-Road Tasks & Maneuvers
5.1 Perform backing and parking manoeuvres with a tractor-trailer.
5.2 Safely perform tractor-trailer coupling and uncoupling tasks.
5.4 Apply chains to a tire on a tractor-trailer.
6. Documents, Regulations and Planning
6.1 Administer workplace documents and communicate effectively through written and electronic means.
6.2 Complete basic mathematical calculations required for commercial vehicle operation.

6.3 Plan ahead and anticipate problems.
7. Vehicle Inspection Activities
7.1 Inspect and maintain commercial vehicles.
7.2 Inspect each component or system listed in the NSC 13 for minor and major defects, as required.
8. Hours of Service Compliance
8.1 Comply with the requirements of the hours of service regulations.
9. Cargo Securement and Loss Prevention
9.1 Comply with basic cargo securement requirements.
9.2 Prevent cargo loss claims, and follow required procedures to maintain secure facilities, prevent cargo loss and avoid damage.
10. Air Brakes
10.1 Operate air brake equipped vehicles safely and in compliance with the applicable regulations.
10.2 Conduct pre-trip and enroute air brake inspections and identify any minor or major defects.
10.3 Check and adjust air brake pushrod travel.

Hours of instruction by module

Module		Theory Training	In-Yard Around the Vehicle	In-Cab (Behind the Wheel)		Total Hours	
				Off-Road Maneuvers	On-Road Driving		
1. Overview of the Trucking Industry		3	-	-	-	**3**	
2. Vehicle Components and Systems		3.5	2	-	-	**5.5**	
3. Driving Techniques		6	-	-	40	**46**	
4. Professional Driving Habits		4	-	-	10	**14**	
5. Off-Road Tasks & Maneuvers	Backing	2	-	12	-	14	**25**
	Coupling/Slide	1	1	6	-	8	
	Chain up	1	2	-	-	3	
6. Documents, Regulations and Planning		5	-	-	-	**5**	
7. Vehicle Inspection Activities		3.5	10	-	-	**13.5**	
8. Hours of Service Compliance		5	-	-	-	**5**	
9. Cargo Securement and Loss Prevention		4	2	-	-	**6**	
10. Air Brakes		9	2*	-	-	**11**	
Total Hours by Learning Environment		**47**	**19**	**18**	**50**	**134**	
Mandatory practical flexible time		-	**6**			**6**	
Total Theory and Practical Hours		**47**	**93**			**140**	

*Total practical air brake time is 6.5 hours. This includes 2 hours as part of the air brake practical unit and an additional 4.5 hours of practical training in yard during pre-trip inspection lessons.

1 Overview of the trucking industry

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	3	-	-	-	3

Learning outcome 1.1: Describe the requirements for employers and workers to comply with government regulations and develop standards.

Learning Indicators

1.1.1 Explains that workers and employers must comply with government regulations and standards.

1.1.2 Identifies that standards may apply to worker obligations, rights and responsibilities; employment; health and safety; labour agreements; etc.

1.1.3 Explains the need to identify workplace hazards according to workplace practice, procedures and policies, and how hazards information is communicated such as Workplace Hazardous Materials Information System (WHMIS), and labels and Safety Data Sheets (SDS).

1.1.4 Describes common workplace hazards and risks and how they can change.

1.1.5 Identifies that employment requirements may include: security screening and background checks; regular appraisals and performance reviews; pre-employment, periodic, or post-incident drug and alcohol testing.

1.1.6 Identifies that employment requirements will require medical clearance based on a specific type of driver's licence, and will also involve an initial and periodic physical assessment or fitness screening.

1.1.7 Explains that workers are sometimes expected to rely heavily on their personal knowledge of regulatory or compliance requirements.

Learning outcome 1.2: Effectively interact and speak with coworkers, supervisors, customers, suppliers, enforcement officials and the general public.

Learning Indicators

1.2.1 Explains that interactions involving spoken words include specific words as well as the accompanying tone of voice, context, gestures and body language.

1.2.2 Describes gestures and body language that convey messages without exchanging spoken words.

Performance Elements

1.2.3 Adheres to regulations that require employers and workers to provide a workplace in which everyone feels secure and free of unnecessary conflict.

1.2.4 Practices sensitivity to cultural, ethnic, and gender diversity, and uses a gentle and careful approach when encountering any misunderstanding.

Learning outcome 1.3: Explain the importance of being "fit for work", maintaining a healthy lifestyle, and balancing personal and work life.

Learning Indicators

1.3.1 Explains that some types of driving require significant amounts of time away from home and that this schedule can cause work-related and personal stress, and can affect family relationships.

1.3.2 Explains that lifestyle and dietary factors can influence fatigue, performance, physical fitness and agility.

1.3.3 Describes occupational factors which can contribute to health-related challenges such as obstructive sleep apnea, back strain, injuries caused by slips and falls, etc.

Learning outcome 1.4: Explain the purpose, fundamental structure and basic content of regulations that apply to commercial vehicle operations.

Learning Indicators

Driver Licensing

1.4.1 Explains that different classes of driver's licences apply to different types of vehicles and the required licence varies between Canadian jurisdictions.

1.4.2 Explains that a driver's licence may require specific endorsements for certain types of commercial vehicles and operations.

1.4.3 Explains that personal driving history, and medical condition and history, can affect the status of a worker's commercial licence and ability to drive commercial vehicles.

1.4.4 Explains that government agencies develop and retain records of driver incidents and infractions and commercial motor carrier incidents and infractions.

1.4.5 Identifies some of the medical conditions that may prohibit a driver from holding specific types of commercial driver's licences.

Regulations

1.4.6 Explains the role of regulations and training in crash prevention.

1.4.7 Describes the National Safety Code as a model for Canadian jurisdictions to

regulate the safe operation of commercial vehicles.

1.4.8 Explains that legislation and regulations may affect operations within each jurisdiction, and that applicable rules can vary, even during the same workday, depending on where a driver is working.

1.4.9 Explains that regulations apply to the

- movement of vehicles on all public roads and highways
- mechanical condition of commercial vehicles
- allowable weights and dimensions of commercial vehicles
- securing of cargo transported by commercial vehicles
- air brake systems used on commercial vehicle
- daily inspection of commercial vehicles
- transport of materials and products defined as dangerous goods, and
- hours a person is permitted to drive a commercial vehicle, be on-duty, and be off-duty.

Vehicle restrictions

1.4.10 Explains that commercial vehicles are generally defined by weight and that individual Canadian jurisdictions can set unique weight thresholds.

1.4.11 Explains that commercial vehicles may be restricted from operating on certain routes, or at particular times, due to their weight, licence, size or the commodity being transported.

Dangerous goods

1.4.12 Explains that some cargo is defined through regulations as dangerous goods.

1.4.13 Explains that dangerous goods can only be handled and transported by workers who have been specifically trained and certified.

1.4.14 Identifies the types of symbols used to identify dangerous goods.

Learning outcome 1.5: Describe how to recognize when human trafficking may be occurring and how to report it.

Learning Indicators

1.5.1 Describe several signs that human trafficking may be occurring.

1.5.2 Explain how to report human trafficking.

2 Vehicle components and systems

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	3.5	2	-	-	5.5

Learning outcome 2.1: Operate commercial vehicle systems and controls.

Learning Indicators

2.1.1 Describes the general components and basic function of a typical commercial vehicle engine compartment and fluid system.

2.1.2 Describes the general layout and function of major body, frame and external vehicle components and systems.

2.1.3 Explains the differences between single, tandem, tridem and other multi-axle configurations.

2.1.4 Describes the basic types, features and function of tires and wheels.

2.1.5 Describes the physical features and operation of common types of suspension systems.

2.1.6 Describes the physical features and basic operation of drum and disc brake systems.

2.1.7 Describes the way that Anti-lock Brake Systems (ABS) keep wheels from locking, but may not shorten vehicle stopping distance.

2.1.8 Describes how stability control systems operate and affect vehicle operation.

2.1.9 Describes the physical features, indicators, warnings, and the basic operation of hydraulic systems.

2.1.10 Describes different types of trailer coupling devices.

Performance Elements

2.1.11 Locates and operates all typical primary and secondary controls, gauges and instruments.

2.1.12 Explains the instrument panel indicators displaying important vehicle operating information, warnings and safety system status.

2.1.13 Operates one or more typical manual transmission and clutch, automated manual transmission and/or automatic transmission.

2.1.14 Locates fuel tanks and filler caps, and apply proper fueling methods.

2.1.15 Identifies important commercial vehicle service items, and locates operating fluid check points.

2.1.16 Identifies the correct operating fluids required for a vehicle and how to properly re-fill and maintain fluid levels.

2.1.17 Operates a differential lock or inter-axle differential lock, if equipped.

2.1.18 Operates engine brake or retarders, and understands how and when to appropriately use these systems to control vehicle speed.

2.1.19 Operates vehicle heating, defrosting and air-conditioning systems.

2.1.20 Operates vehicle lamps and accessories.

2.1.21 Operates windshield wiper and washer systems.

3 Driving techniques

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	6	-	-	40	46

Learning outcome 3.1: Prepare and start to drive a commercial vehicle.

Learning Indicators

3.1.1 Explains the importance of being fully alert when driving and the importance that judgment is not impaired in any way while driving.

3.1.2 Describes ways to check and remove vehicle restraints and other loading dock devices.

3.1.3 Explains the importance of proper start-up and warm-up procedures.

Performance Elements

3.1.4 Applies a method for confirming that they are fully alert and their judgment is not impaired in any way before beginning to drive.

3.1.5 Confirms every time before leaving the driver's seat; that the vehicle is secured by the vehicle's parking brake, wheel chocks or suitable blocks.

3.1.6 Enters and exits the cab, or the vehicle cargo area, maintaining a three-point contact, and explains the risks of improperly climbing onto or jumping from equipment.

3.1.7 Locates required vehicle documents such as permit books, vehicle registration, insurance, bills of lading, etc.

3.1.8 Confirms all required vehicle and cargo documents are valid and correct.

3.1.9 Adjusts the driver's seat to the correct position before driving.

3.1.10 Inspects, wears and properly adjusts seatbelt before driving.

3.1.11 Sets up mirrors to minimize the vehicle's blind spots.

3.1.12 Monitors the engine, instrument panel and indicator lamps.

3.1.13 Starts the engine correctly.

3.1.14 Listens for normal vehicle sounds, while starting the vehicle's engine and avoiding unnecessary idling.

3.1.15 Scans all controls and instruments before driving.

Learning outcome 3.2: Comply with operational regulations that apply to commercial vehicles**.**

Learning Indicators

3.2.1 Explains the need to know the height of their vehicle before driving on any road and how to determine the height.

3.2.2 Explains the need to know the approximate empty and loaded weight of their vehicle before driving on any road.

3.2.3 Explains how to comply with specific requirements for using toll routes and bridges, and scales.

3.2.4 Explains that steep grades require different driving techniques for different locations and how to properly use emergency runaway lanes.

3.2.5 Explains the times, days and/or weeks when commercial vehicle operations are restricted in certain urban areas and imposed through municipal bylaws.

3.2.6 Explains standard highway height and weight limits and restrictions.

3.2.7 Explains the need to carry the emergency equipment required for certain commercial vehicle operations.

3.2.8 Explains the importance of immediately recognizing and responding to an unexpected situation in which their vehicle weight or height is greater than what is permitted to operate on a particular road or highway.

3.2.9 Explains the importance of respecting local bylaws restricting vehicle loading and unloading activities, parking and idling.

3.2.10 Identifies routes that prohibit commercial vehicles.

3.2.11 Explains the regulation and procedures for a “notice and order”.

3.2.12 Explains safe and legal procedures when entering or exiting a scale and when being pulled over by enforcement officers, including:

- Waiting to stop in a safe location
- Following directions of the officer
- Knowing that CVSE officers have the right to detain
- Procedures for entering and exiting a scale.

Performance Elements

3.2.13 Reads all road signage with particular messages that apply to commercial vehicles.

3.2.14 Takes extra care when crossing railway tracks, and before crossing, determines the space available for vehicles.

3.2.15 Shifts gears while crossing railroad tracks only when necessary.

3.2.16 Enters vehicle inspection facilities, or pulls off the roadway, when instructed by an officer or highway signage.

3.2.17 Watches for potential hazards of unmarked overhead obstructions such as: canopies, roof overhangs and other building protrusions, signs, utility lines, tree limbs, doorway entries, etc.

3.2.18 Watches for snow build-up, debris or road construction that can change vehicle height, weight or clearances.

3.2.19 Identifies and reads all road signs indicating the weight capacity of roadways or bridges — including seasonal weight restrictions.

Learning outcome 3.3: Operate a commercial vehicle in a safe manner and perform basic driving manoeuvres.

Learning Indicators

3.3.1 Explain the meaning of all road signs and markings

3.3.2 Explain traffic regulations that apply to commercial vehicles

Performance Elements

3.3.3 Uses effective observation skills including:

- setting up mirrors to reduce blind spots
- scans conditions around the vehicle by looking ahead and using mirrors regularly and systematically
- scans instruments and gauges regularly and systematically
- continual observation and monitoring of road conditions
- regular traffic checks
- monitors vehicle blind spots
- observes road signage and pavement markings
- maintaining a high level of alertness.

3.3.4 Manages space and speed including

- Maintaining vehicle speed that is appropriate for road and traffic conditions and adheres to speed regulations
- keeping a safe following distance in all conditions
- maintaining proper road and lane position when traveling and turning
- stopping in the correct location at stops
- maintaining space around the vehicle based on off-tracking and clearance requirements
- adjusting speed and space as needed when entering or exiting traffic and

merging.

3.3.5 Operates vehicle controls smoothly, including

- maintaining two-handed grip on the steering wheel as much as practical
- selecting gears correctly and shifting smoothly
- accelerating and braking smoothly.

3.3.6 Communicates correctly and in a timely manner to other road users.

- Timely and correct use of vehicle signals
- Uses other ways to communicate, as appropriate (horn, brake lights, hazard lights)

3.3.7 Pays attention to traffic, the vehicle, driving conditions, and other road users, including:

- Monitors vehicle behaviour and operating conditions
- Integrates with traffic and shows awareness of other road users
- Interpret right-of-way obligations correctly
- Drives courteously and yields, as appropriate, to other road users and pedestrians
- Maintains attention and avoids sources of distraction while driving

3.3.8 Drives through curves, to the right and to the left, in a safe manner, including:

- Adjusting speed before the curve
- Following a proper path based on vehicle off-tracking and clearance requirements

3.3.9 Ascends steep grades in a safe manner on both urban streets and on higher speed roads.

3.3.10 Descends steep grades in a safe manner on both urban streets and higher speed roads.

3.3.11 Changes lanes in a safe manner on both urban streets and higher speed roads.

3.3.12 Crosses intersections in an urban setting in a safe manner including:

- traffic lights
- two and four-way stops
- uncontrolled
- traffic circles / roundabouts.

3.3.13 Turns at intersections in an urban setting in a safe manner including:

- traffic lights
- two and four-way stops

- uncontrolled
- traffic circles / roundabouts.

3.3.14 Enters a highway/freeway in a safe manner.

3.3.15 Exits a highway/freeway in a safe manner.

3.3.16 Makes efficient and courteous use of passing lanes.

3.3.17 Applies safe driving technique when proceeding through construction zones and detours.

Learning outcome 3.4: Use fuel-efficient driving habits.

Learning Indicators

3.4.1 Explains the economic and environmental importance of fuel-efficient driving methods.

3.4.2 Describes the use of different fuel types, vehicle technology, fuel additives, etc. to help reduce fuel consumption.

Performance Elements

3.4.3 Accelerates at a smooth and gradual rate.

3.4.4 Anticipates when changes in speed, gear selection and surrounding space will be necessary.

3.4.5 Operates the engine and transmission close to the fuel-efficient rpm range whenever possible.

3.4.6 Chooses a fuel-efficient highway speed.

3.4.7 Uses progressive shifting and selects the engine rpm and gear that are best for the vehicle speed and load

3.4.8 Controls shift points by adjusting the throttle, when driving a vehicle with an automated transmission.

3.4.9 Looks ahead continually, anticipates the need to change speed, and changes speed gradually.

3.4.10 Uses cruise control whenever appropriate for driving conditions.

3.4.11 Idles the vehicle’s engine as little as possible.

3.4.12 Maintains tires for fuel-efficient road performance.

4 Professional driving habits

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	4	-	-	10	14

Learning outcome 4.1: Apply defensive and cooperative driving techniques.

Learning Indicators

4.1.1 Explains the importance of defensive and cooperative driving habits.

4.1.2 Describes common collision scenarios and contributing factors, and explains ways to avoid.

4.1.3 Explains the visual clues and other signs of potentially hazardous traffic situations.

4.1.4 Explains duty of care — to proactively protect other road users from harm.

4.1.5 Explains responsibility to sharing the road with pedestrians and other road users, and the consequences of failing to do so.

4.1.6 Appreciates why they should offer help to other commercial drivers who need assistance.

4.1.7 Explains how the additional size and weight of their vehicle may be perceived by other road users.

4.1.8 Explains how the laws of motion apply to driving.

4.1.9 Describes how steering control is lost when tires skid during heavy brake use or when braking with poor traction.

4.1.10 Explains how personal factors such as driving motives, driving experience, health, impatience/aggression, and overconfidence affect risk perception and driving choices.

4.1.11 Explains how to adapt to driving at night.

Performance Elements

4.1.12 Observes and critiques own habits to identify ways to improve.

4.1.13 Monitors the actions of other drivers, changing weather, and changing road surfaces and conditions.

4.1.14 Adjusts driving techniques to match the vehicle configuration, cargo weight, centre of gravity, and driving experience.

4.1.15 Assesses and adapts to changing conditions, including adverse driving conditions.

4.1.16 Drives safely at night (Dependent on time of year).

4.1.17 Recognizes and takes steps to avoid situations that might cause anger, hostility or danger.

4.1.18 Is courteous, and yields to other motorists, cyclists, pedestrians and slow-moving vehicles.

4.1.19 Adapts to the presence of other motorists, pedestrians, cyclists and slow-moving vehicles which share the road with commercial vehicles.

4.1.20 Watches for wildlife or livestock which can enter the space around a vehicle, particularly on routes known for collisions involving animals.

4.1.21 Scans mirrors, instruments and gauges regularly and systematically.

4.1.22 Exits the vehicle whenever necessary to inspect clearances and identify potential obstructions.

4.1.23 Maintains an appropriate following distance in all driving conditions.

4.1.24 Maintains attention and avoids sources of distraction while driving.

4.1.25 Maintains vehicle speed that is appropriate for conditions, and adheres to regulations.

4.1.26 Monitors the movement and actions of other motorists while passing or being passed.

4.1.27 Observes traffic patterns and other road users, and selects a safe roadside location for stopping and/or parking, and resumes safely back into traffic.

Learning outcome 4.2: Handle emergency incidents in a professional manner.

Learning Indicators

4.2.1 Describes the typical kinds of incidents that must be reported to employers, police and other reporting agencies.

4.2.2 Describes the importance of following workplace practices, procedures and policies when engaging emergency support such as: towing, recovery and repair services, or when speaking with police, media, or the public.

4.2.3 Explains the importance of following the specific requirements of workplace practices, procedures and policies regarding collisions, close calls, injuries or other similar incidents.

4.2.4 Explains the importance of workplace practices, procedures and policies relating to obligations and limitations in administering first aid.

4.2.5 Explains what to do in the event of emergency situations, including:

- Ensuring no danger for the driver
- Loss of brakes / Use of runaway lanes
- Skid / Jackknife
- Loss of visibility
- Vehicle malfunction
- Tire blowout or fire
- Brake fire
- Spill or loss of load
- When to call the fire department
- Driver medical distress.

4.2.6 Explains how and when to use emergency equipment carried in the vehicle such as: fire extinguisher, emergency warnings devices, spill kits, etc.

Performance Elements

4.2.7 Uses warning devices and other emergency equipment safely and in compliance with regulations.

5 Off-road tasks and manoeuvres

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Totals
			Off-Road Driving	On-Road Driving	
Backing	2	-	12	-	14
Coupling	1	1	6	-	8
Chain up	1	2	-	-	3
Totals	4	3	18	-	25

Learning outcome 5.1: Perform backing and parking manoeuvres with a tractor-trailer.

Performance Elements

5.1.1 Performs straight-line backing manoeuvres with a tractor-trailer unit in a safe manner.

Manoeuvre space — straight-line backing manoeuvre will be in a space between 3.5 metres and 3.7 metres wide, and 30 metres long.

5.1.2 Performs offset backing manoeuvres with a tractor-trailer, to the right and to the left, in a safe manner.

Manoeuvre space — offset backing manoeuvre will be from a space that is between 3.5 metres and 3.7 metres wide, and at least as long as 2/3 the length of the tractor-trailer, into an adjacent space of the same dimensions. The pull-up space in front of the two spaces described must be at least one and one half times the length of the tractor-trailer. The manoeuvre will be learned from both sides.

5.1.3 Performs alley-dock backing manoeuvres with a tractor-trailer, to the right and to the left, in a safe manner.

Manoeuvre space: alley-dock backing manoeuvres will be into a space that is between 3.5 m and 3.7 m wide, and at least as long as two thirds the length of the tractor-trailer, starting with the vehicle positioned perpendicular to the space. The pull-up space in front of the backing target space must be no deeper than the length of the vehicle. The manoeuvre will be learned from both sides.

5.1.4 Optional: Performs parallel parking manoeuvres with a tractor-trailer in a safe manner.

Learning outcome 5.2 Safely perform tractor-trailer coupling and uncoupling tasks.

Performance Elements

5.2.1 Couples a tractor-trailer in a safe manner.

5.2.2 Uncouples a tractor-trailer in a safe manner.

5.2.3 Adjusts a vehicle's fifth wheel setting, axle position, or suspension system.

5.2.4 Checks load on axle weights at a scale.

Learning outcome 5.3: Apply chains to a tire on a tractor-trailer.

Performance Elements

5.3.1 Correctly fits and secures chains to a tire.

5.3.2 Removes and correctly stores tire chains.

5.3.3 Identifies and replaces a broken tire chain.

6 Documents regulations and planning

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	5	-	-	-	5

Learning outcome 6.1: Administer workplace documents and communicate effectively through written and electronic means.

Learning Indicators

6.1.1 Identifies and describes the meaning of messages and symbols on cargo packaging and cargo documents such as waybills, packing lists, delivery documents, instructions, workplace hazard information, etc.

6.1.2 Identifies and describes the basic purpose, importance and proper condition of required vehicle related documents.

Performance Elements

6.1.3 Accesses information and reference tables such as those related to vehicle weights and dimensions.

6.1.4 Records some basic information onto cargo-related documents such as waybills.

6.1.5 Uses electronic and communication devices common in commercial vehicle operations, and describes when and where such use is permitted.

Learning outcome 6.2: Complete basic mathematical calculations required for commercial vehicle operation.

Performance Elements

6.2.1 Converts simple imperial and metric measurements using tables, mathematical formulas, or conversion programs.

6.2.2 Calculates route and trip distances

6.2.3 Estimates fuel consumption rates, and estimate how far a vehicle can travel on a particular quantity of fuel

6.2.4 Calculates actual and allowable axle weights

6.2.5 Determines vehicle dimensions and axle spacing requirements, and complete calculations to confirm compliance with vehicle requirements such as "bridge

formulas", etc.

6.2.6 Calculates trip durations to determine arrival times and plans departure times

6.2.7 Estimates and records cargo weight.

Learning outcome 6.3: Plan ahead and anticipate problems.

Learning Indicators

6.3.1 Explains the risk of traveling to an unfamiliar location without first confirming facilities and preferred routes.

6.3.2 Identifies some special requirements relating to a vehicle, load, routing or commodity.

6.3.3 Identifies sources of reliable information about weather and road conditions.

6.3.4 Describes the need to carry required emergency equipment on or inside the vehicle.

6.3.5 Describes typical vehicle workplace risks and hazards.

6.3.6 Explains the need to carry first aid supplies.

6.3.7 Explains the driver's responsibility to deal with a build-up of snow or ice on their vehicles.

Performance Elements

6.3.8 Accesses sources of maps and electronic route information.

6.3.9 Accesses sources of information about commercial vehicle routes, road construction, road closures, height clearances, weight restrictions, permit requirements, etc.

6.3.10 Prepares a route plan that considers vehicle size and weight.

6.3.11 Demonstrates use of some basic hand tools.

6.3.12 Locates emergency contact information.

7 Vehicle inspection activities

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	3.5	10	-	-	13.5

Learning outcome 7.1: Inspect and maintain commercial vehicles.

Learning Indicators

7.1.1 Explains the need for every workplace to establish a system, and keep a written or electronic record, for periodically inspecting and maintaining vehicles.

7.1.2 Explains their responsibility for the safe condition of each commercial vehicle they operate.

7.1.3 Explains that every commercial vehicle must meet prescribed performance standards while operating on a highway.

7.1.4 Explains that the NSC 13 lists all minor and major defects that the driver is expected to identify.

7.1.5 Explains that the NSC 13 includes the most common defects/unsafe conditions that a driver may encounter.

7.1.6 Explains the importance of enforcement and audit programs to ensure that inspection and maintenance is adequate.

7.1.7 Explains the consequences of vehicle failures due to poor inspections.

Performance Elements

7.1.8 Conducts daily inspections of vehicles and operating components and identifies each of the 75 minor and major defects listed in the NSC 13.

7.1.9 Uses personal protective equipment during maintenance and inspection activities.

7.1.10 Confirms that every commercial vehicle being operated displays valid evidence that regulatory periodic inspections and workplace-specific inspections have been conducted.

7.1.11 Inspects the level of operating fluids including fuel, engine oil, engine coolant, power steering oil, windshield washer, diesel exhaust fluid (DEF), etc. - and top up when necessary.

7.1.12 Inspects basic vehicle components, such as drive belts, hoses, tires, switches, etc.

7.1.13 Identifies when a minor or major defect listed in the NSC 13 is present on their vehicle.

7.1.14 Completes and signs written or electronic daily inspection reports that declare the vehicle's condition.

7.1.15 Monitors vehicle condition on a continuous basis, according to the NSC 13 schedule list, while driving or otherwise being responsible for the vehicle, and updates the inspection report as required.

7.1.16 Records on an inspection report every minor defect found during an inspection or while operating a vehicle, and reports the minor defect according to workplace practices, procedures and policies.

7.1.17 Records immediately on an inspection document and report every major defect found during an inspection, or while operating a vehicle, and stops operating the vehicle.

7.1.18 Maintains a vehicle's out-of-service status whenever a major defect is identified, until the condition is corrected.

7.1.19 Conducts regular en route and post-trip vehicle inspections.

7.1.20 Adheres to the regulations whenever accepting an inspection report from another worker.

7.1.21 Carries a valid inspection report for each vehicle operated and a copy of the NSC 13 schedule, and produces these items when required by an enforcement officer.

Learning outcome 7.2: Inspect each component or system listed in the NSC 13 for minor and major defects, as required.

7.2.1 Inspects the air brake system for:

Minor defects

- audible air leaks
- slow air pressure build-up rate.

Major defects

- pushrod stroke of any brake exceeds the adjustment limit
- air loss rate exceeds the prescribed limit
- inoperative tractor protection system
- low air warning system fails, or system is activated
- inoperative service, parking or emergency brake.

7.2.2 Inspects the cab for:

Minor defect

- Occupant compartment door fails to open

Major defect

- Any cab or sleeper door fails to close securely.

7.2.3 Inspects the cargo securement for:

Minor defects

- Insecure or improper load covering (e.g., wrong type or flapping in the wind)

Major defects

- Insecure cargo
- Absence, failure, malfunction or deterioration of required cargo securement device or load covering.

7.2.4 Inspects coupling devices for:

Minor defects

- Coupler or mounting has loose or missing fastener

Major defects

- Coupling or locking mechanism is damaged or fails to lock
- Defective, incorrect or missing safety chain/cable
- Coupler is insecure, or movement exceeds prescribed limit.

7.2.5 Inspects dangerous goods for:

Major defects

- Dangerous goods requirements not met

7.2.6 Inspects driver controls for:

Minor defects

- Accelerator pedal, clutch, gauges, audible and visual indicators or instruments fail to function properly.

7.2.7 Inspects driver seat for:

Minor defects

- Seat is damaged or fails to remain in set position

Major defects

- Seatbelt or tether belt is insecure, missing or malfunctions.

7.2.8 Inspects emergency equipment and safety devices for:

Minor defects

- Emergency equipment is missing, damaged or defective.

7.2.9 Inspects exhaust system for:

Minor defects

- Exhaust leak

Major defects

- Leak that causes exhaust gas to enter the occupant compartment.

7.2.10 Inspects frame and cargo body for:

Minor defects

- Damaged frame or cargo body

Major defects

- Visibly shifted, cracked, collapsing or sagging frame member(s).

7.2.11 Inspects fuel system for:

Minor defects

- Missing fuel tank cap

Major defects

- Insecure fuel tank
- Dripping fuel leak.

7.2.12 Inspects a vehicle's general condition for:

Major defects

- Serious damage or deterioration that is noticeable and may affect the vehicle's safe operation.

7.2.13 Inspects glass and mirrors for:

Minor defects

- Required mirror or window glass fails to provide the required view to the driver as a result of being cracked, broken, damaged, missing or maladjusted.
- Required mirror or glass has broken or damaged attachments onto vehicle body.

7.2.14 Inspects heater and defroster for:

Minor defects

- Control or system failure

Major defects

- Defroster fails to provide unobstructed view through the windshield.

7.2.15 Inspects horn for:

Minor defects

- Vehicle has no operative horn.

7.2.16 Hydraulic brake system (if equipped) for:

Minor defects

- Brake fluid level is below indicated minimum level

Major defects

- Parking brake is inoperative
- Brake boost or power assist is not operative
- Brake fluid leak
- Brake pedal or insufficient pedal reserve
- Activation (other than ABS) warning device
- Brake fluid reservoir is less than ¼ full.

7.2.17 Inspects lamps (lights) and reflectors for:

Minor defects

- Required light does not function as intended
- Required reflector is missing or partially missing

Major defects – that can only be present when use of lights is required

- Failure of both low-beam headlights
- Failure of both rearmost taillights

Major defects – that may be present at any time

- Failure of rearmost turn signal light
- Failure of both rearmost brake lights.

7.2.18 Inspects steering for:

Minor defects

- Steering wheel lash (free-play) is greater than normal

Major defects

- Steering wheel is insecure, or does not respond normally
- Steering wheel lash (free play) exceeds prescribed limit.

7.2.19 Inspects suspension system for:

Minor defects

- air leak in air suspension system.
- broken spring leaf
- suspension fastener is loose, missing or broken.

Major defects

- damaged or deflated air bag [‘damaged’ means - patched, cut, bruised, cracked to braid, mounted insecurely].
- cracked or broken main spring leaf or more than one broken spring leaf.

- part of spring leaf or suspension is missing, shifted out of place or in contact with another vehicle component.
- loose U-bolt.

7.2.20 Inspects tires for:

Minor defects

- damaged tread or sidewall of tire.
- tire leaking (if leak can be felt or heard, tire is to be treated as flat

Major defects

- flat tire
- tire tread depth is less than wear limit
- tire is in contact with another tire or any vehicle component other than mud-flap
- tire is marked "Not for highway use"
- tire has exposed cords in the tread or outer side wall area.

7.2.21 Inspects wheels, hubs and fasteners for:

Minor defects

- hub oil below minimum level (When fitted with sight glass)
- leaking wheel seal

Major defects

- wheel has loose, missing or ineffective fastener
- damaged, cracked or broken wheel, rim or attaching part
- evidence of imminent wheel, hub or bearing failure.

7.2.22 Inspects windshield wiper and washer for:

Minor defects

- control or system malfunction
- wiper blade damaged, missing or fails to adequately clear driver's field of vision

Major defects – that can only be present when use of wipers or washer is required

- wiper or washer fails to adequately clear driver's field of vision in area swept by driver's side wiper.

8 Hours of service compliance

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	5	-	-	-	5

Learning outcome 8.1: Comply with the requirements of the hours of service regulations.

Learning Indicators

8.1.1 Explains that the hours of service regulations apply to operating most commercial vehicles.

8.1.2 Explains that they are on-duty when driving, in care and control of a vehicle, and performing other types of work.

8.1.3 Explains that drivers must comply with hours of service regulations.

8.1.4 Explains that driving a commercial vehicle is prohibited:

- after being on-duty for 14 hours in a day and work shift
- after accumulating 13 hours of driving in a day and work shift
- when 16 hours have elapsed since their work shift began.

8.1.5 Identifies that a commercial vehicle may be operated for personal use, and for up to 75 km in a day when: the vehicle is empty and no trailer is being towed; no work of any sort is being done for a motor carrier; and the starting and ending odometer readings are recorded in the driver's daily log.

8.1.6 Explains that a work shift begins when they return to on-duty, after being off-duty for at least eight consecutive hours.

8.1.7 Identifies they are still considered to be on the previous work shift when returning to on-duty after less than eight hours off-duty, and they may be prohibited from driving if they exceed the 13, 14 and 16 hour rule.

8.1.8 Explains that a 7-day cycle allow a driver to be on-duty for 70 hours in a 7-day period.

8.1.9 Explains that a 14-day cycle allows a driver to be on-duty for 120 hours in a 14-day period.

8.1.10 Explains that a reset can only take place after the required minimum number of consecutive hours off- duty, and this period is called a "reset".

8.1.11 Explains that resetting a 7 day cycle requires at least 36 consecutive hours off duty.

8.1.12 Explains that resetting a 14 day cycle requires at least 72 consecutive hours off duty.

8.1.13 Identifies that up to 2 hours of the required minimum daily off- duty time can be deferred from one day to the next as long as the deferred time is added to the period of 8-consecutive hours of off-duty time on the following day.

8.1.14 Identifies that when encountering specifically defined adverse driving conditions, driving up to 2 hours beyond the daily limit is permitted, when remaining within the 16-hour work shift rule.

8.1.15 Identifies that, when adverse conditions cause a driver to be on-duty longer than is normally permitted, and this causes a driver to exceed the hours in their cycle, those cycle requirements must be met by the end of the following day.

8.1.16 Identifies that on-duty, driving and off-duty requirements do not apply when encountering an emergency, under certain circumstances.

8.1.17 Identifies that the "day" shown on a daily log is a 24-hour period which generally begins at midnight, but can start at any time set by a motor carrier.

8.1.18 Explains that home terminal is the location at which the driver ordinarily reports for work and may include a temporary work site location designated by the motor carrier.

8.1.19 Identifies that a driver may be exempt from the requirements to complete and carry a daily log when: they drive within a radius of 160 km from the location at which the driver starts the day and returns to the same location at the end of the day.

8.1.20 Identifies that a record of each driver's duty status must track the driver's activities within each day, within the work shift, and within a duty cycle.

8.1.21 Identifies that a driver using a record of duty status instead of a daily log must still comply with all of the driving restrictions.

8.1.22 Identifies that proper use of the sleeper berth allows the off-duty period to be split.

8.1.23 Identifies that off-duty periods can be split into shorter periods in certain conditions.

8.1.24 Identifies that the Canadian federal hours of service requirements differ from those in the U.S.

Performance Elements

8.1.25 Calculates when they can begin to drive, and how many hours are available for driving each day.

8.1.26 Stops driving when any one of the on-duty limits is reached.

8.1.27 Stops driving a commercial vehicle:

- after being on-duty for 14 hours in a day or work shift

- after accumulating 13 hours of driving in a day or work shift
- when 16 hours have elapsed since their work shift began.

8.1.28 Tracks their status within each day as defined on the daily log, and tracks the duty status within their work shift, which can start at any time of day.

8.1.29 Maintains a complete, legible, and accurate driver's daily log (in a written or electronic format) that fully complies with the regulations.

8.1.30 Carries daily logs that apply to the preceding 14 days, whenever operating a commercial vehicle requiring the driver to carry a log.

8.1.31 Retains daily logs as required by the regulations.

8.1.32 Explains and demonstrates how to use an electronic logging device.

9 Cargo securement and loss prevention

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	4	2	-	-	6

Learning outcome 9.1: Comply with basic cargo securement requirements.

Learning Indicators

9.1.1 Explains that every commercial vehicle transporting cargo must have the cargo secured according to the regulations (National Safety Code Standard 10).

9.1.2 Explains that the requirement to secure cargo includes any material, equipment or other loose article carried on the vehicle, including dunnage, blocking, tarps, tools, equipment, spare materials, etc.

9.1.3 Explains that all cargo must be secured to that it cannot move, including:

- to ensure that it cannot fall off the vehicle, or in any way be lost
- to prevent forward, rearward and sideways movement, and in some cases must also be secured to prevent upward movement
- so that it cannot shift in a way that can affect a vehicle's stability or manoeuverability in a negative way.

9.1.4 Explains that cargo must be loaded in such a way that it does not interfere with the driver's ability to drive the vehicle safely, and does not block vehicle entry or exit.

9.1.5 Explains that articles of cargo are generally secured against the vehicle's structure and by using devices such as tie-downs, blocking and bracing.

9.1.6 Explain that devices used to secure cargo are generally rated for their strength and that most cargo requires a minimum number of tie-downs with particular working load limit ratings.

9.1.7 Explain that cargo tie-downs are specifically designed and rated for particular use, must have a means to be tightened, and must be used according to the manufacturer instructions.

9.1.8 Explain that tie-down ratings are determined by manufacturers, are expressed as a "working load limit" (WLL), and marked on the tie-downs.

9.1.9 Explain that the combined strength of individual tie-downs used together to restrain cargo is called the "aggregate working load limit".

9.1.10 Explain that friction between cargo and vehicle surfaces, and friction between different articles of cargo that are in contact, helps to keep some types of cargo secure.

9.1.11 Describe how size, shape and weight of cargo generally dictates the required number, strength and placement of tie-downs.

9.1.12 Explain how cargo fully enclosed within a vehicle structure will not generally require tie-downs, but may require blocking, bracing or devices to increase friction between the vehicle and cargo.

9.1.13 Explain that the aggregate working load limit of tie-downs used to secure cargo must equal at least 50% of the cargo weight

9.1.14 Explain that the individual pieces of cargo will, in some cases, need to be unitized into larger units of cargo

9.1.15 Explains that drivers are not required to inspect cargo if a vehicle has been sealed to prevent access and they have been instructed by their employer not to remove the seal.

9.1.16 Explains that some cargo can be secured according to general regulatory requirements.

9.1.17 Explains how certain commodities require specific securing methods, devices and equipment to comply with specific regulatory requirements.

9.1.18 Identifies that specific securement methods are required for: logs, dressed lumber and similar building materials, metal coils, paper rolls, concrete pipe, inter-modal containers, automobiles, light trucks and vans, heavy vehicles equipment and machinery, flattened or crushed cars, roll-on/roll-off and hook-lift containers, boulders, etc.

9.1.19 Describes the basic operation of portable or on-board cargo heating equipment.

9.1.20 Explains how to arrange cargo to improve aerodynamics and fuel efficiency.

Performance Elements

Generally, learning the hands-on portion of cargo inspection and securement will be handled by the employer. Depending upon the trailer used for training, instructors must provide some basic hands-on instruction on cargo securement devices during the course.

9.1.21 Confirms that cargo securing methods or devices are the proper type, and are properly used, strong enough, and in good condition.

9.1.22 Inspects cargo, related articles and methods used to secure the cargo before driving, and at specific intervals during the trip to confirm everything is properly secured to comply with regulations.

9.1.23 Inspects cargo and related articles at specific intervals during the trip to ensure everything remains properly secured to comply with the regulations,

and according to workplace practices, procedures and policies.

9.1.24 Inspects the condition and integrity of tie-down devices, and adjust tie-downs as necessary to keep cargo secure during transport.

Learning outcome 9.2: Prevent cargo loss claims, and follow required procedures to maintain secure facilities, prevent cargo loss and avoid damage.

Learning Indicators

9.2.1 Identifies that operation of cargo handling equipment must be performed in the proper manner, and only when a person is fully trained and authorized.

9.2.2 Explains use of cargo seals, pin locks and similar vehicle security devices.

9.2.3 Describes how to use cargo access doors in a safe manner, and protect against potential falling cargo when opening doors.

Performance Elements

9.2.4 Handles and loads cargo carefully, and describe basic ways to confirm that all cargo is properly packaged, unitized, arranged and secured inside facilities and vehicles.

9.2.5 Uses appropriate Personal Protective Equipment properly and as required and recognize that such use may be required, inside or outside of every workplace, shipper facility and customer facility.

10 Air brakes

Learning Environment Hours					
	Classroom	In-Yard	In-Cab		Total
			Off-Road Driving	On-Road Driving	
Total	9	2	-	-	11

Learning outcome 10.1: Operate air brake equipped vehicles safely and in compliance with the applicable regulations

Learning Indicators

10.1.1 Explains the role and importance of air brakes safety regulations and potential driver safety hazards related to air brakes.

10.1.2 Explains the basic operating principles of air brakes, including an air-over-hydraulic brake system.

10.1.3 Describes operation of supply sub-system.

10.1.4 Describes operation of service brake sub-system.

10.1.5 Describes operation of spring (parking/emergency) brake sub-system.

10.1.6 Describes operation of trailer sub-system and related components.

10.1.7 Explains the basic function of foundation brakes and related components.

10.1.8 Explains the effect of speed and weight on vehicle braking.

10.1.9 Describes effect of brake adjustment on vehicle braking ability.

10.1.10 Describes conditions such as brake fade, brake lag, and overheated brakes.

10.1.11 Identifies common brake types and recognizes many of the components.

10.1.12 Explains the function and condition of air tank drain valves.

Learning outcome 10.2: Conduct pre-trip and enroute air brake inspections and identify any minor or major defects

Learning Indicators

10.2.1. Identifies tools and supplies needed to conduct the pre-trip.

10.2.2. Explains how to identify damaged, missing or malfunctioning foundation brake components.

10.2.3. Explains how to identify cracked, loose, missing or contaminated brake lining, improper drum contact, or lining that is less than the required thickness.

10.2.4. Explains how to identify overheated brake drums.

10.2.5. Explains how to identify any audible air leaks and visible evidence of cracks and non-manufactured holes in brake chambers.

10.2.6. Explains how to identify mismatched brake chamber size and/or slack adjuster length on steering axles.

10.2.7. Explains how to identify cracked and/or broken brake drums or rotors.

10.2.8. Explains how to identify leaks, damage, deterioration and improper fittings on readily visible brake hoses and air lines.

10.2.9. Explains how to identify insecure air compressor mounts, brackets or fastener and fluid leaks.

10.2.10. Explains what to check on the air system during an enroute "brake check" inspection.

Performance Elements

10.2.11. Secures the vehicle for the pre-trip inspection.

10.2.12. Inspects all air brake system components for visible damage.

10.2.13. Describes correct response to brake system defects.

10.2.14. Identifies and locates supply tank(s).

10.2.15. Identifies if air tanks are securely mounted.

10.2.16. Measures air pressure build-up time.

10.2.17. Identifies air compressor governor cut-out and cut-in pressure.

10.2.18. Tests for air loss in the system.

10.2.19. Tests the low air pressure warning device, both audible and visual.

10.2.20. Tests function of service brakes on tractor (foot valve).

10.2.21. Tests function of spring (parking/emergency) brakes.

10.2.22. Checks glad hand security and connection.

10.2.23. Tests the tractor protection valve.

10.2.24. Tests function of service brakes on the trailer (hand valve).

10.2.25. Tests automatic application of the trailer spring (parking/emergency) brakes.

Learning outcome 10.3: Check and adjust air brake pushrod travel

Learning Indicators

10.3.1 Explains why air brake adjustment needs to be checked regularly.

10.3.2 Differentiates between manual and automatic slack adjusters.

10.3.3 Explains the advantage of automatic slack adjusters.

10.3.4 Differentiates between different brake chamber types.

Performance Elements

10.3.5 Measures brake pushrod travel accurately using both the applied stroke and hand pull (pry) method.

10.3.6 Identifies when pushrod stroke is longer than the prescribed limit based on chamber type.

10.3.7 Adjusts brake pushrod travel correctly based on the brake chamber type.