Plan of Training

HEAVY EQUIPMENT OPERATOR

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Education
Institutional and Industrial Education Division

December 2009

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Approved by:

Chairperson, Provincial Apprenticeship and Certification Board

Date: Sept 23/09

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We offer you a sincere thank you.

Contact Information

Department of Education
Institutional and Industrial Education Division
Tel: 709-729-2729 / 1-877-771-3737
Email: app@gov.nl.ca
Web: www.gov.nl.ca/app

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Foreword

Apprenticeship training in the Province of Newfoundland and Labrador is undergoing considerable change. This change is prompted by the need to keep pace with technological changes in industry, the need to be competitive, and the desire to be efficient and effective in meeting the needs of the apprentice. We feel that this training plan will lay the groundwork to meet both the demands of industry and the needs of the apprentice.

The plan that follows is a comprehensive one. It recognizes that apprenticeship training begins when a student first registers at a training institution, or signs a Memorandum of Understanding with an employer, and continues until such time as the apprentice has completed all of the required technical training and has received the required industry experiences necessary to write a provincial examination. Passing this examination will result in the apprentice receiving Provincial Certification which gives the journeyperson provincial qualifications. This plan also recognizes the need to provide flexible access to training based on the needs of the employer and the apprentice while at the same time recognizing the end goal is to complete the requirements for Provincial Certification.

It is realized that change in all facets of education and industry is continuous and sometimes rapid. This change will necessitate the review of this document on a continuous basis to ensure that current needs of industry and apprentices are being satisfied. Through a process of accreditation, regular input from industry advisory committees, as well as input from those involved in the administration and delivery of the training, we are confident that residents of our province who elect to pursue an apprenticeable occupation as a career choice will receive high quality training and thus will be prepared to compete for jobs worldwide.

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A. Conditions Governing Apprenticeship Training

1.0 General

The following general conditions apply to all apprenticeship training programs approved by the Provincial Apprenticeship and Certification Board (PACB) in accordance with the *Apprenticeship Training and Certification Act (1999)*. If an occupation requires additional conditions, these will be noted in the specific Plan of Training for the occupation. In no case should there be a conflict between these conditions and the additional requirements specified in certain Plan of Training.

2.0 Entrance Requirements

2.1 Entry into the occupation as an apprentice requires:

Indenturing into the occupation by an employer who agrees to provide the appropriate training and work experiences as outlined in the Plan of Training.

2.2 Notwithstanding the above, each candidate must have successfully completed a high school program or equivalent, and in addition may be required to have completed certain academic subjects as specified in particular Plan of Training. Mature students, at the discretion of the Director of Institutional and Industrial Education, may be registered. A mature student is defined as one who has reached the age of 19 and who can demonstrate the ability and the interest to complete the requirements for certification.

2.3 At the discretion of the Director of Institutional and Industrial Education, credit toward the apprenticeship program may be awarded to an apprentice for previous work experience and/or training as validated through prior learning assessment.

2.4 An Application for Apprenticeship form must be duly completed.

3.0 Probationary Period

The probationary period for each Memorandum of Understanding will be six months. Within that period the memorandum may be terminated by either party upon giving the other party and the PACB one week notice in writing.

4.0 Termination of a Memorandum of Understanding

After the probationary period referred to in Section 3.0, the Memorandum of Understanding may be terminated by the PACB by mutual consent of the parties involved, or cancelled by the PACB for proper and sufficient cause in the opinion of the PACB.

5.0 Apprenticeship Progression Schedule and Wage Rates

5.1 Progression Schedule

7200 Hour Programs	**Requirements for Progression**	**Progress To**
First Year Apprentice	Completion of entry level (Block 1) courses, plus relevant work experience totaling a minimum of 1800 hours *	Second Year
Second Year Apprentice	Completion of advanced level (Block 2) courses, plus relevant work experience totaling a minimum of 3600 hours	Third Year
Third Year Apprentice	Completion of advanced level (Block 3) courses, plus relevant work experience totaling a minimum of 5400 hours	Fourth Year
Fourth Year Apprentice	Completion of advanced level (Block 4) courses and (Blocks 5 & 6) *if applicable,* plus sign-off of workplace skills required for certification totaling a minimum of 7200 hours**	Write Certification Examination
5400 Hour Programs	**Requirements for Progression**	**Progress To**

First Year Apprentice	Completion of entry level (Block 1) courses, plus relevant work experience totaling a minimum of 1800 hours *	Second Year
Second Year Apprentice	Completion of advanced level (Block 2) courses, plus relevant work experience totaling a minimum of 3600 hours	Third Year
Third Year Apprentice	Completion of advanced level (Block 3) courses, plus sign-off of workplace skills required for certification totaling a minimum of 5400 hours	Write Certification Examination

4800 Hour Programs	**Requirements for Progression**	**Progress To**
First Year Apprentice	Completion of entry level courses (Block 1) courses, plus relevant work experience totaling a minimum of 1600 hours *	Second Year
Second Year Apprentice	Completion of advanced level (Block 2) courses, plus relevant work experience totaling a minimum of 3200 hours	Third Year
Third Year Apprentice	Completion of advanced level (Block 3) courses, plus sign-off of workplace skills required for certification totaling a minimum of 4800 hours	Write Certification Examination

HEO Program (only)	**Requirements for Progression**	**Progress To**
Apprentice	Completion of entry level courses (720 hours), plus sign-off of workplace skills in one piece of equipment totaling a minimum of 4800 hours *	Write Certification Examination for one piece of Equipment
Journeyperson – one piece of equipment	Completion and sign-off of additional workplace skills totaling a minimum of 1800 hours in an additional piece of equipment	Write Certification Examination for second piece of Equipment

Journeyperson – two to six pieces of equipment	Completion and sign-off of additional workplace skills totaling a minimum of 1800 hours in <u>each</u> additional piece of equipment	Write Certification Examination for third to seventh piece of Equipment

* All direct entry apprentices must meet the **Requirements for Progression** either through Prior Learning Assessment and Recognition or course completion before advancing to the next year.

** Apprentices in a 7200 hour program which incorporates more than four blocks of training are considered fourth year apprentices pending completion of 100% course credits and workplace skills requirements.

5.2 For the duration of each Apprenticeship Training Period, the apprentice who is not covered by a collective agreement, shall be paid a progressively increased schedule of wages.

Program Duration	**Wage Rates**		**Comments**
7200 Hours	1st Year	60%	These wage rates are percentages of the prevailing journeyperson's wage rate in the place of employment of the apprentice. No apprentice shall be paid less than the wage rate established by the Labour Standards Act (1988), as now in force or as hereafter amended, or by other Order, as amended from time to time replacing the first mentioned Order.
	2nd Year	70%	
	3rd Year	80%	
	4th Year	90%	
5400 Hours and 4800 Hours	1st Year	60%	
	2nd Year	75%	
	3rd Year	90%	
4000 Hours			(Hairstylist Program) - The apprentice shall be paid no less than the minimum wage for hours worked and a commission agreed upon between the apprentice and the employer.

6.0 Tools

Apprentices shall be required to obtain hand tools as and when specified by the PACB.

7.0 Periodic Examinations and Evaluation

7.1 Every apprentice shall submit to such occupational tests and examinations as the PACB shall direct. If after such occupational tests and examinations the apprentice is found to be making unsatisfactory progress, his/her rate of wage shall not be advanced as provided in Section 5 until his/her progress is satisfactory to the Director of Institutional and Industrial Education and his/her date of completion shall be deferred accordingly. Persistent failure to pass required tests shall be a cause for revocation of his/her Memorandum of Understanding.

7.2 Upon receipt of reports of accelerated progress of the apprentice, the PACB may shorten the term of apprenticeship and advance the date of completion accordingly.

7.3 For each and every course, a formal assessment is required for which 70% is the pass mark. At the discretion of the instructor, the summative mark may be for completion of a theory examination or a combination of the theory examination and an assigned practical project.

8.0 Granting of Certificates of Apprenticeship

Upon the successful completion of apprenticeship, the PACB shall issue a Certificate of Apprenticeship

9.0 Hours of Work

Any hours employed in the performance of duties related to the designated occupation will be credited towards the completion of the term of apprenticeship. Appropriate documentation of these hours must be provided.

10.0 Copies of the Registration for Apprenticeship

The Director of Institutional and Industrial Education shall provide copies of the Registration for Apprenticeship form to all signatories to the document.

11.0 Ratio of Apprentices to Journeypersons

The ratio of apprentices to journeypersons shall not exceed two apprentices to every one journeyperson employed, with the condition that one of these be a final year apprentice.

12.0 Relationship to a Collective Bargaining Agreement

Collective agreements take precedence over the conditions outlined in the Plan of Training.

13.0 Amendments to a Plan of Apprenticeship Training

A plan of training may be amended at any time by the PACB.

14.0 Employment, Re-Employment and Training Requirements

14.1 The Plan of Training requires apprentices to regularly attend their place of employment.

14.2 The Plan of Training requires apprentices to regularly attend training programs for that occupation as prescribed by the PACB.

14.3 Failure to comply with Sections 14.1 and/or 14.2 will result in cancellation of the Memorandum of Understanding. Apprentices may have their MOUs reinstated by the PACB but would be subject to a commitment to complete the entire program as outlined in the General Conditions of Apprenticeship. An apprentice will be required to pay a reinstatement fee. Permanent cancellation in the said occupation is the result of non-compliance.

14.4 Cancellation of the Memorandum of Understanding to challenge journeyperson examinations, if unsuccessful, would require an apprentice to serve a time penalty of two (2) years before reinstatement as an apprentice or registering as a Trade Qualifier.

14.5 Under the Plan of Training the employer is required to keep each apprentice employed as long as work is available, and if the apprentice is laid off due to lack of work, to give first opportunity to be hired before another is hired.

14.6 The employer will permit each apprentice to regularly attend training programs as prescribed by the PACB.

14.7 Apprentices who cannot acquire all the workplace skills at their place of employment will have to be evaluated in a simulated work environment at a training institution and have sign-off done by instructors to meet the requirements for certification.

15.0 Appeals to Decisions Based on Conditions Governing Apprenticeship Training

Persons wishing to appeal any decisions based on the above conditions must do so in writing to the Minister of Education within 30 days of the decision.

B. Requirements for Provincial Certification

1. Evidence the required work experiences outlined in this Plan of Training have been obtained. This evidence must be in a format clearly outlining the experiences and must be signed by an appropriate person or persons attesting that these experiences have been obtained to the level required.

2. Successful completion of all required courses in program.

3. A combination of training from an approved training program and suitable work experience totalling 4800 hours for the initial piece of equipment.

4. Completion of a Provincial examination, to be set at a place and time determined by the Institutional and Industrial Education Division.

5. Payment of the appropriate examination fee.

6. For additional endorsements, please refer to page 8.

C. Roles and Responsibilities of Stakeholders in the Apprenticeship Process

The apprenticeship process involves a number of stakeholders playing significant roles in the training of apprentices. This section outlines these roles and the responsibilities resulting from them.

The Apprentice:

- completes all required technical training courses as approved by the PACB.
- finds appropriate employment.
- completes all required work experiences in combination with the required hours.
- ensures work experiences are well documented.
- approaches apprenticeship training with an attitude and commitment that fosters the qualities necessary for a successful career as a qualified journeyperson.
- obtains the required hand tools as specified by the PACB for each period of training of the apprenticeship program.

The Employer:

- provides high quality work experiences in an environment conducive to learning.
- remunerates apprentices as set out in the Plan of Training or Collective Agreements.
- provides feedback to training institutions, Institutional and Industrial Education Division and apprentices in an effort to establish a process of continuous quality improvement.
- where appropriate, releases apprentices for the purpose of returning to a training institution to complete the necessary technical courses.

- ensures work experiences of the apprentice are documented.

The Training Institution:

- provides a high quality learning environment.
- provides the necessary student support services that will enhance an apprentice's ability to be successful.
- participates with other stakeholders in the continual updating of programs.

The Institutional and Industrial Education Division:

- establishes and maintains program advisory committees under the direction of the PACB.
- promotes apprenticeship training as a viable career option to prospective apprentices and other appropriate persons involved, such as career guidance counsellors, teachers, parents, etc.
- establishes and maintains a protocol with training institutions, employers and other appropriate stakeholders to ensure the quality of apprenticeship training programs.
- ensures all apprentices are appropriately registered and records are maintained as required.
- schedules all necessary technical training periods for apprentices to complete requirements for certification.
- administers provincial/interprovincial examinations.

The Provincial Apprenticeship and Certification Board:

- sets policies to ensure the provisions of the *Apprenticeship and Certification Act (1999)* are implemented.
- ensures advisory and examination committees are established and maintained.
- accredits institutions to deliver apprenticeship training programs.
- designates occupations for apprenticeship training and/or certification.

D. Program Structure

For each and every course, a formal assessment is required for which 70% is the pass mark. At the discretion of the instructor, the summative mark may be for completion of a theory examination or a combination of the theory examination and an assigned practical project.

The order of course delivery within each block can be determined by the educational agency, as long as pre-requisite conditions are satisfied.

Block 1 – Semester 1 (suggested)			
Course Number	**Course Name**	**Hours**	**Pre-requisites**
HE1101	Equipment Operation Safety	12	-
HE1120	Grades and Stakes	30	Co-requisite MA1060
HE1201	Equipment Maintenance	55	HE1101, Co-requisite MA1060
HE1301	Regulation/Emergency Procedures	45	-
TS1530	Standard First Aid	14	-
HE1610	Professional Driver Improvement Course (PDIC)	15	-
HE1600	Air Brakes	15	-
HE1640	Trenching Safety	4	-
*MA1060	Basic Math	60	-
MC1050	Introduction to Computers	30	-
Choose one course from the heavy equipment list in Table 1.0:		80	-
Total Hours Block 1 – Semester 1		**360**	

Block 1 – Semester 2 (suggested)			
Course Number	**Course Name**	**Hours**	**Pre-requisites**
AP1100	Introduction to Apprenticeship	15	-
HE1620	Powerline Hazards	4	-
HE1630	Transportation of Dangerous Goods	6	-
CM2150	Workplace Communications	45	-
SP2330	Quality Assurance/Quality Control	30	-
MR1220	Customer Service	30	-
SD1700	Workplace Skills	30	-
SD1710	Job Search Techniques	15	-
SD1720	Entrepreneurial Awareness	15	-
TS1520	WHMIS	6	-
OL1600	Traffic Control Person	4	-
Choose two courses from the heavy equipment list in Table 1.0:		160	-
Total Hours Block 1 – Semester 2		**360**	

Total Course Credit Hours	**720**

***A student who can meet the Mathematics requirement through an ACUPLACER® test may be exempted from Mathematics 1060. Please check with your training institution.**

Heavy Equipment List

Table 1.0

Course Number	Course Name	Hours	Pre-requisites
Choose three (3) of the following courses which will consist of a minimum of 60 hours operating time per student per piece of equipment.			
HE1501	Bulldozers	80	HE1101, Co-requisite MA1060
HE1511	Graders	80	
HE1521	Backhoes	80	
HE1531	Front End Loaders	80	
HE1541	Tandem Dump Trucks	80	
HE1551	Off Highway Trucks	80	
HE1561	Excavators	80	

Block 1 – Semester 1

HE1101 Equipment Operation Safety

Description:

This course in heavy equipment operation fundamentals requires environment, equipment, operator, education, engineering and enforcement. It involves following safety regulations, assessing variable conditions (road, vehicle, driver, light weather and traffic), planning strategies, operating equipment, and preventing emergencies. It includes information on passing and being passed, power line hazards, and types of collisions (head on, ahead, behind and intersection).

Pre-requisites: None

Course Aims:

- To develop the skills and knowledge required for the safe operation of heavy equipment with respect to various codes and regulations

- To practice safety in potentially harmful situations

- To develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. List five items of compulsory safety gear for this specific occupation.

2. State the minimum specifications or C.S.A. codes for any three items from the list in #3 above.

3. List safety apparel suitable for all weather/all season heavy equipment operation in accordance with Occupational Health and Safety Regulations and/or as common sense dictates.
4. State any hazard that could develop if a warning sign such as "DO NOT OPERATE - BRAKES INOPERATIVE" is not heeded.

5. State at least two steps to follow if you either:
   i. discover a warning tag or symbol, or
   ii. find it necessary to attach a warning tag or symbol to a machine

6. Explain why it is important to check the security of as well as adequately clean all the items in #5 above.

7. State at least five precautions to follow when mounting/dismounting, thereby preventing slipping, falling, missing hardware, or other near-miss accidents.

8. State the minimum safe operating clearance for the overhead, sides, forward, and rearward clearance of obstacles.

9. State the conditions which should be considered in determining equipment operating clearances on the job and while in training.

10. List safety procedures to use when running an engine in an enclosed area.

11. List at least 4 toxic fumes that are associated with engine exhaust gases.

12. Identify hoses and attachments needed to connect the engine exhaust pipe to a central ventilation system in a maintenance shop.

13. List at least one device used to control exhaust fumes from engines when working in an underground work site.

14. State 5 emergency procedures for an emergency situation.

15. List at least 3 common physiological (body) states which could lead to a dangerous operating situation.

16. List at least 3 common psychological (mental) states which could lead to a dangerous operating situation.

17. List at least 5 common mechanical failures which could lead to a dangerous operating situation.

18. List at least 8 common meteorological (weather) and terrestrial (land) conditions which could lead to a dangerous operating situation.

19. List at least 10 operational malpractice and poor habits which could lead to a dangerous operating situation.

20. Outline, in accordance with the Dept. of Forest Resources and Lands, the regulations governing exhaust flame or spark arrester while operating machinery in the forest.

21. List the four types of fire extinguisher and the specific applications of each.

22. Draw or explain the symbol used for each type of fire extinguisher.

23. State the usual operation of each type of fire extinguisher.

24. List the checks for each type of fire extinguisher that determine if authorized servicing or maintenance is required.

25. Describe safety procedures for using power wood saws.

26. Explain or demonstrate how to adjust and fasten properly the operator's harness and/or seat belt.

27. State, regardless of appearance, when a seat belt and/or restraining harness should be replaced.

28. State the regulation(s) regarding the usage of a harness and/or seat belt.

29. State the characteristics of oxy-acetylene fuels and describe potential hazards when exposed to environments where oxy-acetylene cutting is performed.

30. Identify the components of the fire tetrahedron.

31. Identify the components of a fire suppression system.

Major Tasks / Sub-Tasks (Skills):

1. Wear protective clothing and equipment.
    i. identify potential hazards to personal safety
    ii. keep work area clean and tidy
    iii. demonstrate personal safety
2. Interpret warning signs, symbols and danger tags.

   i. locate and identify, using operator's manual or the actual machine, any warning tag or warning symbol
   ii. correctly match symbols to corresponding meanings

3. Mount and dismount equipment properly.
   i. identify, from diagrams or from the actual machine, all safety grab-irons, handrails, steps, and foot-pegs used when mounting or dismounting equipment
   ii. mount/dismount equipment properly at all times

4. Verify safe clearance in work areas.

5. Recognize dangerous operating actions for enclosed areas.

6. Use fire extinguishing equipment.
   i. select and use proper fire extinguisher for simulated fire conditions

7. Use chain saws safely.

8. Use seat belts and safety harness.

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1120 Grades and Stakes

Description:

This course in Grades and Stakes involves knowledge of the use of basic survey equipment. It includes equipment setup and layout of survey stakes. It requires some reference to planning design fundamentals, construction terminology, building materials and road building.

Pre-requisites: Co-requisite MA1060

Course Aims:

- to develop the knowledge required to understand the layout of survey grade stakes
- to develop the skills and knowledge required to read grade stakes
- to develop an appreciation of road design and construction

Course Objectives (Knowledge):

1. Identify on design drawings survey stakes used in the construction industry.
2. State the purpose for various grade stakes used in the construction industry.
3. List the four basic survey work stakes used in road construction.
4. List five classes of soils used in road construction.
5. Identify on a road cross section nine common terms used in road construction.
6. List three common ditch types.
7. Describe earth moving terms used in the construction industry.
8. List five utility warning stakes.

9. List the flag or ribbon color for each utility warning stake.

10. Calculate metric cubic measurements for a given situation.

11. Identify the various measuring tools used to establish grade levels.

12. Define the meaning of slope ratio e.g. 2:1.

13. Describe the use of a hand level in transferring elevation.

14. Describe the use of a survey rod used in survey measurement.

15. Define the term Final Grade (Finish Grade) in reference to the construction industry.

16. Describe the procedure for setting up a survey level.

17. Describe the use of a survey chain (measuring tape for survey).

18. List the factors considered in the classification system for public roads.

19. Identify road systems.

20. State the purpose of road classifications and explain characteristics of the various classifications.

21. List the departments of government that are responsible for forest access, and the public road system in the province of Newfoundland and Labrador.

22. Explain the necessity for the preparation of a profile and its relationship to active construction.

Major Tasks/Sub-Tasks (Skills):

1. Identify survey stakes.
    i. demonstrate the ability to identify survey stakes used in road construction

2. Identify survey stake layouts in a given field exercise.
    i. identify survey grade stakes used in a layout

ii. read and record each survey grade stake as per design

3. Perform a cut slope check.
   i. demonstrate the ability to check a cut slope
   ii. record the cut slope check using a diagram

4. Identify a ditch stake layout as a given field exercise.
   i. read and record the ditch stake layout on a diagram

5. Calculate the slope ratio for a given slope dimension.

6. Operate a hand level.
   i. transfer stake information from a survey stake to another using a hand level
   ii. check a ditch grade using a hand level

7. Demonstrate the ability to use a survey rod in an actual survey operation.

HE1201 Equipment Maintenance

Description:

This course in heavy equipment operation fundamentals requires the use of tools and equipment, and materials and supplies. It involves following manufacturers recommendations for the maintenance of equipment and adjustment of components. It includes information on types and operation of equipment and component parts.

Pre-requisites: HE1101, Co-requisite MA1060

Course Aims:

- to develop the skills and knowledge required for maintaining heavy equipment with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. State the volume of oil to be used when servicing the various components.

2. Describe the maintenance procedures required on the various systems to ensure the successful operation of the machine.

3. State what servicing, maintenance or lubrication is required for each of the given service/hour meter reading listed (machine running hours) as they apply to the machine you are now operating.
   Service/Hour Meter Readings: 10 hrs. (or daily); 50 hrs. (or weekly); 100 hrs. (or bi-monthly); 125 hrs; 150 hrs; 200 hrs; 250 hrs; 300 hrs; 500 hrs. (or 3 months); 600 hrs; 1000 hrs. (or 6 months); 1200 hrs; 1500 hrs. (or 9 months); 2000 hrs. (or 1 year); or when required.

4. State why there is a need for record keeping of lubrication and servicing.

5. State the kind of information to be compiled in a Work Record Sheet (or Time Card) and Log Book corresponding to the machines the student selects.

6. Explain the purpose of lubrication and the need for greasing the machine on a regular basis.

7. List two important functions of grease under extreme load and heat.

8. List four precautions to use when refuelling equipment.

9. List five functions of engine oils.

10. List four additives found in engine oil.

11. List two functions and two additives of gear oils.

12. Identify the components of the engines lubrication system from a diagram.

13. List the American Petroleum Institute (A.P.I.) Engine Service classification for "S" Service Station and "C" Commercial.

14. List five Viscosity numbers that have been designated by the Society of Automobile Engineers for engine oils.

15. List two types of fuel systems used on engines.

16. List two grades of commercial diesel fuel used.

17. List the fuel combustion cycle.

18. List correct procedures for storing fuel.

19. Explain the purpose of the cooling system in an engine.

20. List at least 12 basic hand tools and 3 power tools used in the HEO occupation.

21. State the basic metallurgical composition of hand tools.

22. State rules for safe use of power tools.

23. State rules for safe use of hand tools.

24. List procedures for the care, cleaning and storage of hand and power tools.

25. Describe safety procedures for using hand tools.

26. Describe safety procedures for metal-cutting power tools.

27. Determine the correct tire inflation pressure(s) for operating and travelling equipment corresponding to the machines the student selects.

28. Explain how a storage battery operates.

29. Describe the types of batteries used in heavy equipment and heavy-duty trucks.

30. Explain the basic battery troubleshooting procedures.

31. Identify the components of a heavy equipment and heavy-duty truck charging system.

32. Identify the components of a heavy equipment and heavy-duty truck starting system.

33. Identify the components of a lighting system for heavy equipment and heavy-duty trucks.

34. State the functions of a starter, generator and alternator.

35. State the functions of glow plugs

36. Determine components and fluids to be checked on a daily or shift basis.

Major Tasks / Sub-Tasks (Skills):

1. Occupational orientation and related tasks.
    i. locate the various components of the lubrication system and list the servicing period for each
    ii. locate and state the purpose of the service meter
    iii. identify the various grades of oils to use under various temperature

conditions

iv. locate the serial number of the machine
v. state the slack allowed in belts and tracks and the procedure to follow when adjusting
vi. state the procedure to follow when starting-up, operating and shutting down the machine under various weather conditions
vii. identify the various attachments available from the equipment dealer, the purpose of each and the maintenance procedures to ensure the successful operation of each

2. Maintain lubrication and servicing records.
   i. identify the appropriate lubrication/servicing/maintenance manuals corresponding to the machine you are now operating
   ii. demonstrate the ability to affix a "warning" sign where it can be easily recognized on some piece of heavy equipment machinery. *(This is applicable in industry whenever lubrication, servicing or other scheduled maintenance is performed)

3. Maintain work record and log book.
   i. complete a sample Work Record Sheet (or Time Card) or a Log Book corresponding to the machines the student selects

4. Order parts.
   i. from an actual machine or given resources and upon completion of this module, the student will be able to:
      - locate the machine serial number or Vehicle Identification Number (V.I.N.) embossed plate corresponding to the machines you are now operating
      - match the appropriate parts book to the correct make, model and serial number of the machine you are now operating
      - locate the engine specifications plate and serial number

5. Grease, lubricate and refuel equipment.
   i. select correct greases for equipment with the aid of a Service Manual
   ii. load a grease gun
   iii. grease the machine
   iv. refuel the machine

6. Service and charge storage battery.
    i. select from a list of safety rules, those pertaining to care and maintenance of batteries
    ii. state general rules of the need for charging a battery
    iii. arrange in order procedures for operating a battery charger
    iv. clean and service a battery
    v. measure battery electrolyte with a hydrometer
    vi. connect a charger to battery terminals

7. Change lubricating oils and filters.
    i. change engine oil and filter
    ii. change transmission filter

8. Service fuel systems.
    i. using a diagram, identify the components of a fuel system
    ii. prime a fuel system
    iii. service a fuel system
        - drain water from tank and sediment bowl
        - change fuel filters
        - change a water separator

9. Service cooling systems.
    i. identify the components of the cooling system from a drawing
    ii. select, from a list, the requirements of a good coolant
    iii. identify the components of the cooling system on the machine he/she operates
    iv. test anti-freeze solution
    v. service cooling system by checking for plugged radiator core or bent fan blades

10. Use power and hand tools safely.

11. Match tool description and terminology to correct hand and power tools.

12. Select and use fasteners.
    i. identify and describe types of fasteners
    ii. identify sizes of fasteners
    iii. use fasteners
    iv. torque bolts

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1301 Regulations and Emergency Procedures

Description:

This course in heavy equipment operation fundamentals requires the use of an appropriate environment and equipment. It involves becoming aware of, accessing, interpreting, integrating and gaining experience with the implementation of regulations and emergency procedures. It includes information on regulations and emergency procedures, national safety code and fuel conservation (pro trucker).

Pre-requisites: None

Course Aims:

- to develop the skills and knowledge required for implementing various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Interpret the definitions used in the Highway Traffic Act.
2. Outline the requirements for the Registration and licensing of vehicles.
3. Outline the regulations for licensing of drivers.
4. Identify all hand signals pertaining to heavy equipment.
5. Given a diagram of different vehicle configurations, identify the maximum permitted mass and maximum wheel or axle mass.
6. Outline the licensing and equipment regulations regarding, fog lamps, maximum and minimum permitted number of lamps visible from the front of the vehicle, maximum

permitted candle power lamps, park lights, headlights, clearance lights, brake (stop) lights, identification lights, back-up lights, signal lights, emergency lights, road servicing vehicles, tires, brakes, exhaust systems, mud flaps, mirrors, horns and speedometers.

7. Describe hydroplaning causes and preventions.

8. Explain driving procedures which conserve fuel.

9. Explain the following types of insurance coverage.
   i. collision
   ii. comprehensive
   iii. accident benefits

10. Outline the action which may be taken by the registrar against a driver involved in an accident if unable to produce a motor vehicle liability insurance card (pink) or a Financial Responsibility Card.

11. Correctly list and explain the operational functions of shut-down controls, and safety controls used during emergency engine stops

12. Select from a list regulations pertaining to operating and travelling machines on public roads using the Occupational Health and Safety Regulations.

13. Identify manufacturer's recommendations or special precautions regarding travelling of vehicles to and from job sites, corresponding to the machines the student selects.

14. Identify what warning sign(s) if any, must be attached to machines while travelling to and from job sites

15. State roll-over protection (ROPS) regulations.

16. Describe the use of straps, slings and tow cables.

17. Describe the safety clothing required for handling wire ropes and link-chains.

18. State situations when using wire rope which can affect its performance, service life and safety.

19. State situations when using link-chain which can affect its performance, service life and safety.

20. Describe the different types of load binders used to lash equipment and materials on floats and lo-boys for transport.

21. List other hardware necessary for lashing down equipment and materials on floats and lo-boys in preparation for transport.

22. List the factors for preventing excessive wear for possible damage when moving disabled equipment.

23. Select from a list guidelines for safe towing of disabled machines.

24. List safety factors in selection of tow bars, cables and tow pins.

25. Define terms associated with loading, lashing and unloading equipment.

26. State safety procedures for loading and moving equipment.

27. State the reasons for floating equipment and the advantages even for short distances.

28. Explain the proper positioning on the float for loading and unloading each type of equipment.

29. State legal dimension requirements for oversize loads in transport.

Major Tasks / Sub-Tasks (Skills):

1. Interpret Highway Traffic Act and National Safety Codes.

2. Identify and interpret hand and audible signals pertaining to heavy equipment operation.

3. Given an appropriate vehicle and checklist inspect the vehicle and indicate on checklist all items not meeting the licensing and equipment standards

4. Report accidents utilizing appropriate forms and relevant documentation.

5. Maintain motor vehicle operator's daily log.

6. Interpret load security regulations.

7. Perform emergency stopping procedures.
    i. locate correctly all emergency engine stops, shut-down controls, and safety controls on the machines selected
    ii. demonstrate emergency stopping procedures with the machines

8. Travel machine on public highways.

9. Demonstrate the ability to lash down equipment and materials on floats and lo-boys for transport.

10. Travel equipment to and from job sites.
    i. check and inflate tires to correct pressure
    ii. indicate to instructor where slow moving vehicle signs should be located on machine
    iii. obey all traffic regulations
    iv. travel machine on a public highway (this applies to machine in the band allowed by law to travel on public road systems)

11. Plan movement of disabled equipment.
    i. select correct tow cables, tow pins to be used
    ii. position equipment, select gear range, and tow a machine

12. Load and unload equipment.
    i. demonstrate the proper use of binders and chains used to secure the load
    ii. load and unload the machine from rear to float

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

TS1530 Standard First Aid

Description:

This course is designed to give the apprentice the ability to recognize situations requiring emergency action and to make appropriate decisions concerning first aid.

Complete a **St. John Ambulance or Canadian Red Cross** Standard First Aid Certificate course.

Pre-Requisites: None

HE1610 Professional Driver Improvement Course

Description:

A Professional Driver Improvement Course which has been designed to help you become a better and safer driver.

This Professional Driver Improvement Course will improve the image of a professional driver by teaching the techniques of defensive driving and promoting a positive attitude towards the task of driving. It will also enable you to better avoid road problem situations.

Course Aims:

- to assess and develop a positive driver attitude that results in safe and legal vehicle operation, responsible behaviour under all driving conditions, as well as courtesy to all road users

Course Objectives (Knowledge):

1. Define and explain the terms "defensive driving" and "preventable collision".
2. State the standards of a professional driver.
3. Explain the importance of applying defensive driving practices and techniques.
4. State a standard Accident Prevention Formula.
5. Identify various categories of driving conditions.
6. Describe how driver attitude affects driving and can lead to or prevent collisions.
7. Discuss the importance of taking responsibility as the driver.
8. Examine the pre-trip mental inventory in relation to the various categories of driving conditions, and the defenses the driver should employ.

9. Review the laws relevant to impaired driving and the dangers of driving with any level of Blood Alcohol Concentrations (B.A.C.) in the Provincial regulations and the Federal Criminal Code.

10. Identify other road users and how to avoid collisions with them.

11. Describe how to avoid collisions when passing or being passed.

12. Discuss what to do at a collision scene.

13. Review changes to the current Road Users Guide.

14. Review proper vehicle reversing techniques.

15. Discuss the benefits of effective route planning.

16. Discuss the importance and benefits of fuel efficiency.

Major Tasks/Sub-Tasks (Skills):

1. Complete a written knowledge exam.

HE1600 Air Brakes

Description:

The Newfoundland and Labrador Air Brake Course includes the fundamentals of compressed air; tactics for air system failure mode diagnosis and troubleshooting; and air brake system and foundation brake components; including air compressors, valves, foundation drum brake and air disc brakes, slack adjusters, brake chambers, shoes and drums.

This course incorporates description, operation, and service elements for the total range of components found within dual air brake systems.

Course Aims:

- to prepare professional drivers to operate commercial vehicles in a safe and collision free manner while using the knowledge gained about air brakes and systems found on a normal commercial vehicle

- the air brake endorsement is necessary if you are planning to upgrade your driver's license to Class 1, 2 or 3 and some Class 5.

Course Objectives (Knowledge):

1. Define and explain the terms “Brakes and Braking”.

2. Explain what Heat, Energy, Traction and Friction means.

3. Describe how we obtain Power using mechanical advantage, the use of Air and Leverage and Pressure.

4. State the three factors used to determine “Stopping Distance”.

5. Identify the components of a Truck Air Brake System.

6. Explain how Basic Air Brakes work.

7. Identify the components of the Trailer Systems.

8. Review operation of both the Truck and Trailer systems.

9. Differentiate between the different types of Dual Air Systems.

10. State the steps to take while completing the Pre-Trip on the single and combination units.

11. Explain the procedures to follow while adjusting Air Brakes.

12. Describe the proper checks to follow during the maintenance and servicing of the Air Brake System.

Major Tasks/Sub-Tasks (Skills):

1. Students will complete the exercises for each section of the Newfoundland and Labrador Air Brake Manual.

2. Write a Department of Government Services and Lands, Motor Registration Division exam for the 09A Endorsement.

HE1640 Trenching Safety

Description:

Trenching Safety is awareness of environmental safety operation, education, engineering and design pertaining to worksite trenching / excavation. It involves following safety regulations, safety procedures and assessing variable conditions - soil types and stability, sloping, shoring and general safety.

Course Aims:

- to develop the skills and knowledge required to work safely with respect to trenching codes and regulations
- to recognize potentially harmful situations
- to recognize rapidly changing soil types and conditions

Course Objectives: (Knowledge)

1. Review Occupational Health and Safety Regulations for working in or near trenching.

2. Discuss the typical causes of trench cave-ins.

3. Define four types of soil conditions that determine the strength and stability of trench walls.

4. Discuss the basic methods for protecting workers against cave-ins (trench boxes, shoring and sloping.)

5. Discuss how to inspect materials used in trenching safety.

6. Identify safe methods of trench access and egress for workers.

7. Understand the importance of locating underground utilities before excavating.

8. Understand the importance of good housekeeping in and around trenching operations.

9. Identify dangerous areas when working with heavy equipment in trenching operations.

10. Awareness of traffic control in and around trenching operations.

11. Awareness and hazards of confined space in and around trenching operations.

12. Awareness of fall arrest precautions while working in and around trenching operations.

13. Awareness of excavator hand signals.

14. Identify emergency procedures while working in and around trenching operations.

Major Tasks:

1. Complete a written assessment of the material covered in this course.

MA1060 Basic Math

Description:

This course in Basic Math requires knowledge of general mathematical concepts and processes to enable trades persons to function in the institutional setting by developing numeracy skills required for technical courses. This math course should also provide a foundation for experiential learning through knowledge of math relating to on-the-job skills and practices. A detailed course outline is available from the Department of Education, Industrial Training Section to training institutions upon request.

Course Outcomes:

- To develop numeracy skills and knowledge required for institutional and on-the-job learning.
- To develop the capability to apply mathematical concepts in the performance of trade practices.
- To develop an appreciation for mathematics as a critical element of the learning environment.
- To use mathematical principles accurately for the purposes of problem solving, job and materials estimation, measurement, calculation, system conversion, diagram interpretation and scale conversions, formulae calculations, and geometric applications.

Pre-Requisites: None

Course Objectives (Knowledge):

1. Define and calculate using whole number operations.

2. Define and demonstrate use of correct orders of operations.

3. Demonstrate examples of operations with fractions and mixed numbers.

4. Demonstrate examples of operations with decimals.

5. Demonstrate examples of operations with percentages.

6. Employ percent/decimal/fraction conversion and comparison.

7. Define and calculate with ratios and proportions.

8. Use the Imperial Measurement system in relevant trade applications.

9. Use the Metric Measurement system in relevant trade applications.

10. Perform Imperial/Metric conversions.

11. Define and demonstrate the formulation of variables.

12. Demonstrate and define the various properties of angles and make relevant calculations.

Major Tasks/Sub-tasks (Skills):

Note: To emphasize or further develop specific knowledge objectives, students may be asked to complete practical demonstrations which confirm proper application of mathematical theory to job skills.

MC1050 Introduction to Computers

Description:

This course is designed to give the student an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, e-mail and the Internet and security issues.

Course Outcomes:

Upon completion of this course, students will have a basic understanding of:

- computer systems and their operation
- popular software packages, their applications
- security issues of computers

Pre-Requisites: None

Objectives & Content:

1. Identify the major components of microcomputer system hardware and software system.

2. Describe the functions of the microprocessor.
   i. describe and give examples of I/O devices
   ii. describe primary storage (RAM, ROM, Cache)
   iii. define bit, byte, code and the prefixes k.m. and g
   iv. describe secondary storage (diskettes and hard disks, CD ROMS, Zip drives, etc)
   v. describe how to care for a computer and its accessories

3. Describe microcomputer software.
   i. define software
   ii. describe types of operational and application software
   iii. define file and give the rules for filenames and file extensions

4. Describe windows software.
   i. start and quit a program
   ii. demonstrate how to use the help function

iii. locate a specific file using the find function
iv. identify system settings: wall paper, screen saver, screen resolution,
v. background
vi. start a program by using the Run Command
vii. shutting down your computer

5. Identify File Management commands.
   i. create folders
   ii. maximize and minimize a window
   iii. describe windows task bar

6. Describe Keyboards.
   i. identify and locate alphabetic and numeric keys
   ii. identify and locate function key & special keys

7. Describe Word Processing.
   i. describe Windows components
   ii. menu bar
   iii. menu indicators
   iv. document window
   v. the Status bar
   vi. the Help feature
   vii. insertion point movements

8. Describe the procedure used to development of a document.
   i. enter text
   ii. change the display

9. Describe the procedure for opening, saving and exiting documents.
   i. saving a document
   ii. closing a document.
   iii. starting a new document Window
   iv. opening a document
   v. exiting word processor

10. Describe the procedure for editing a Document.
    i. adding new text
    ii. deleting text
    iii. using basic format enhancement (split and join paragraphs, insert text)

11. Describe the main Select Features.
    i. identify a selection
    ii. moving a selection
    iii. copying a selection
    iv. deleting a selection
    v. saving a selection

12. Explain how to change layout format.
    i. changing layout format: (margins, spacing, alignment, paragraph indent, tabs, line spacing, page numbering)

13. Explain how to change text attributes.
    i. changing text attributes: (bold, underline, font, etc.)

14. Describe the auxiliary tools.
    i. using Spell Check and Thesaurus

15. Describe Print features.
    i. selecting the Print Feature: (i.e., number of copies and current document)
    ii. identifying various options in print screen dialogue box

16. Examine and discuss electronic spreadsheet.
    i. spreadsheet basics
    ii. the worksheet window

17. Describe menus.
    i. menu bar
    ii. control menu
    iii. shortcut menu
    iv. save, retrieve form menus

18. Describe the components of a worksheet.
    i. entering constant values and formulas
    ii. using the Recalculation feature

19. Describe use ranges.
    i. typing a range for a function
    ii. pointing to a range for a function
    iii. selecting a range for toolbar and menu commands

20. Describe how to print a worksheet.
    i. printing to the Screen
    ii. printing to the Printer
    iii. printing a selected Range

21. Describe how to edit a worksheet.
    i. replacing cell contents
    ii. inserting & deleting rows and columns
    iii. changing cell formats
    iv. changing cell alignments
    v. changing column width
    vi. copying and moving cells

22. State major security issues in using computers.
    i. passwords
    ii. accessing accounts
    iii. viruses and how they can be avoided
    iv. identity theft and ways to protect personal information
    v. demonstrate how to view directory structure and folder content
    vi. organize files and folders
    vii. copy, delete, and move files and folders

23. Describe how to use electronic mail.
    i. e-mail etiquette
    ii. e-mail accounts
    iii. e-mail messages
    iv. e-mail message with attachments
    v. e-mail attachments
    vi. print e-mail messages
    vii. deleting e-mail messages

24. Explain the Internet and its uses.
    i. the World Wide Web(www)
    ii. accessing web sites
    iii. internet web browsers
    iv. internet search engines
    v. searching techniques
    vi. posting documents on-line

Practical:

1. Create a document using Word Processing.

2. Complete word processing exercises to demonstrate proficiency in word processing.

3. Prepare and send e-mails with attachments.

4. Retrieve documents and e-mail attachments and print copies.

5. Develop and print a spread sheet.

6. Post a document on-line.

Block 1 – Semester 2

AP1100 Introduction to Apprenticeship

Description:

This course is designed to give participants the knowledge base and skills necessary to understand and successfully navigate the apprenticeship/red seal program.

Course Outcomes:

Upon successful completion of this course, the apprentice will be able to:

- identify the requirements for registering in an Apprenticeship Program
- describe the registration process
- explain the steps to complete the Apprenticeship Program
- articulate the roles of the Apprentice, Journeyperson, Training Institutions, Industry and Governing Bodies in the Apprentice Program
- explain the significance of the Red Seal Program

Pre-Requisites: None

Objective and Content:

1. Define Apprenticeship.
   i. define Apprenticeship and Red Seal Certification
   ii. discuss the definition of Apprenticeship and Red Seal Certification
   iii. distinguish between Red Seal and Provincial Certification

2. Explore how Apprenticeship is governed and administered
   i. explain who is responsible for administrating apprenticeship
      - Department of Education
      - Provincial Apprenticeship and Certification Board

3. Explore the roles and responsibilities of those involved in the apprenticeship process.

i. Apprentice
ii. Employer/Journeyperson
iii. Industrial Training Division
- explain when and where to take the in-class portion of advance training
- discuss Class Calls

iv. Training Institutions
- Various Delivery Methods

v. Provincial Apprenticeship and Certification Board

4. List and explain the steps in the apprenticeship process.
i. explain the Registration Process
ii. describe apprenticeship as an agreement between employee, employer and Provincial Government
iii. review a Memorandum of Understanding
iv. legal document
v. review an Application of Apprenticeship
- original High School Certificate or equivalent
- original transcript from the applicants Training Institution

vi. describe the roles of Institutional and Industrial Education Division of the Department of Education in Apprenticeship
vii. explain the role of the Program Development Officer
- define probation period
- discusses what constitutes a cancellation of apprenticeship
- explain the consequences of an Apprenticeship cancellation
- discuss the purpose of the Record of Occupational Progress (Log Book)
- explore how to maintain your log book
  - discuss who is responsible for tracking and signing-off on trade skills
  - explain how and where to record hours worked
  - identify the importance of updating your file with your Program Development Officer

viii. differentiate between Provincial and Interprovincial exams

5. Describe the training and education requirements.
i. discuss the factors affecting on-the-job and in class portions of your training
ii. define in school and on the job training
- review a Plan of Training

- identify the percentage of on-the-job and in class training time
- current labour market implications on completing an apprenticeship program

6. Explain Plans of Training.
   i. identify what is included in the Plan of Training
      - entrance requirements
      - duration of in-school and on-the-job training
      - course content
      - entry level or advanced level
   ii. explain how a Journeyperson Certificate is achieved
      - discuss Certificate of Qualification
      - discuss Certificate of Apprenticeship
      - discuss Red Seal endorsement

7. Discuss the Red Seal Program.
   i. define designated trade
   ii. explore the National Occupational Analysis for your trade
   iii. explain Interprovincial Standards Red Seal Program and how it works
      - labor mobility
      - qualification recognition
   iv. discuss the range of careers possible in your chosen trade

8. Explain apprenticeship progression schedule and wage rates.
   i. review a Record of Occupational Progress (Log Book)
   ii. hours per program
   iii. requirements for progression
   iv. wage rates per year of apprenticeship

9. Identify the examinations and evaluation process used in Apprenticeship.
   i. discuss occupational tests and examinations as directed by the Provincial Apprenticeship and Certification Board
      - Theory
      - Practical
   ii. explain formal assessment and the pass mark of 70%

10. Examine some of the financial incentives available to apprentices.
    i. employment insurance (E.I.) Benefits
    ii. government sponsored student loans
    iii. apprenticeship incentive Federal and Provincial
    iv. scholarships
11. Continuing Training outside the Province of Newfoundland and Labrador.
    i. training in other provinces and territories
        - procedure for registration and recognition of hours and skills in other provinces
    ii. options for Dual Certification
        - transfer of credits

12. Review and define the following terms:
    i. Apprenticeship Program Accreditation
    ii. Cancellation of Apprenticeship
    iii. Certificate of Apprenticeship
    iv. Certificate of Qualification
    v. Certification Renewal
    vi. Criteria for Eligibility
    vii. Journeyperson
    viii. Practical Examination
    ix. Prior Learning
    x. Record of Occupational Progress (Logbook)
    xi. Red Seal Certification
    xii. Registered Apprentice
    xiii. Theoretical Examination
    xiv. National Occupational Analysis (NOA)
    xv. Class Call
    xvi. Dual certification

Practical:

1. Review the Provincial Apprenticeship web site: www.gov.nl.ca/app

    i. identify the requirements for registering as an apprentice and the registration process
    ii. explain the steps to complete an apprenticeship program
    iii. identify who is responsible for tracking and signing-off on trade skills
    iv. identify the nearest Industrial Training Office to your community
    v. identify the current incentives available to apprentices

2. Review a plan of training on the Provincial Apprenticeship web site.
    i. identify the hours for your trade (in-school and on-the-job)
    ii. explain the roles and responsibilities of the following stakeholders in the apprenticeship process: employer, apprentice, training institution and the Industrial Training Division

3. Visit the Red Seal Web site http://www.red-seal.ca, review the National Occupational Analyses for your trade.
    i. review the scope of work for your occupation and identify the industry sectors and job types requiring your trade
    ii. identify the trends of your trade
    iii. provide a list of Personal Protective Equipment required for your trade

HE1620 Powerline Hazards

Description:

The course content and materials are provided and administered by the Workplace Health and Safety Compensation Commission **(WHSCC)**.

The purpose of this training is to increase a participant's awareness of the dangers of working near power lines and how to prevent injuries and death due to this work.

Objectives:

Upon completion of this training, participants will be able to work safely near power lines by recognizing hazards and putting controls in place to prevent injury to people and property damage.

Major Tasks:

Completion of the Participant's Workbook from WHSCC.

HE1630 Transportation of Dangerous Goods

Description:

The Transportation of Dangerous Goods Act Regulations is a comprehensive body of legislation that governs the handling, offering for transport and transporting of dangerous goods in Canada.

Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice (through the Canadian Transport Emergency Centre - CANUTEC) on dangerous goods accidents to promote public safety in the transportation of dangerous goods by all modes of transport in Canada.

Course Aims:

1. To provide information regarding the Training Certificate requirements.

2. A person who handles, offers for transport or transports dangerous goods must:
    i. be adequately trained and hold a training certificate in accordance with TDG regulations; or
    ii. perform those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with TDG regulations

3. An employer must not direct or allow an employee to handle, offer for transport or transport dangerous goods unless the employee:
    i. is adequately trained and holds a training certificate in accordance with TDG regulations ; or
    ii. perform those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with TDG regulations

Course Objectives (Knowledge):

A person is adequately trained, as per Transport Canada regulations, if the person has a sound knowledge of all the topics listed below as it relates to the person's duties and to the dangerous goods the person is expected to handle, offer for transport or transport:

1. The classification criteria and test methods in "Classification".

2. Shipping names.

3. The use of Schedules 1, 2 and 3.

4. The shipping document and train consist of requirements in "Documentation".

5. The dangerous goods safety marks requirements in "Dangerous Goods Safety Marks".

6. The certification safety marks requirements, safety requirements and safety standards in "Means of Containment".

7. The emergency response assistance plan requirements in "Emergency Response Assistance Plan".

8. The report requirements in "Accidental Release and Imminent Accidental Release Report Requirements".

9. Safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods.

10. The proper use of any equipment used to handle or transport the dangerous goods.

11. The reasonable emergency measures the person must take to reduce or eliminate any danger to public safety that results or may reasonably be expected to result from an accidental release of the dangerous goods.

12. For air transport, the aspects of training set out in "Training – General" by the ICAO Technical Instructions for the persons named in that Chapter and the requirements in "Air" of these Regulations; and SOR/2002-306 (*The ICAO Technical Instructions require the approval of training programs for air carriers. Information may be obtained from the Chief, Dangerous Goods Standards, Civil Aviation, Transport Canada).*

13. For marine transport, the requirements set out in the IMDG Code and the "Dangerous Goods Shipping Regulations", as applicable, and the requirements in "Marine" of these Regulations.

Major Tasks/Sub-Tasks (Skills):

1. Students will complete the exercises and write an exam using the TDG Guide as a reference.

http://www.tc.gc.ca/tdg/clear/part6.htm#sec61

CM2150 Workplace Communications

Description:

This course is designed to introduce students to the principles of effective communication including letters, memos, short report writing, oral presentations and interpersonal communications.

Course Outcomes:

Upon completion of the course, students will be able to:

- understand and apply communication skills as outlined in the Employability Skills 2000, Conference Board of Canada
- understand the importance of well-developed writing skills in business and in career development
- understand the purpose of the various types of business correspondence
- examine the principles of effective business writing
- examine the standard formats for letters and memos
- write effective letters and memos
- examine the fundamentals of informal reports and the report writing procedure
- produce and orally present an informal report
- examine effective listening skills and body language in communication

Pre-Requisites: None

Objectives and Content:

1. Apply rules and principles for writing clear, concise, complete sentences which adhere to the conventions of grammar, punctuation, and mechanics.

2. Explain the rules of subject-verb agreement.

3. Define and describe the major characteristics of an effective paragraph.

4. Examine the value of Business Writing Skills.
    i. describe the importance of effective writing skills in business
    ii. describe the value of well-developed writing skills to career success as referenced in the Employability Skills

5. Examine principles of Effective Business Writing.
    i. discuss the rationale and techniques for fostering goodwill in business communication, regardless of the circumstances
    ii. review the importance of revising and proofreading
    iii. differentiate between letter and memo applications in the workplace & review samples
    iv. identify the parts of a business letter and memo
    v. review the standard formats for business letters and memos
    vi. examine samples of well-written and poorly written letters and memos
    vii. examine guidelines for writing sample letters and memos which convey: acknowledgment, routine request, routine response, complaint, refusal, persuasive request and letters of appeal

6. Examine the fundamentals of Informal Business Reports.

    i. identify the purpose of the informal report
    ii. identify the parts and formats of an informal report
    iii. identify methods of information gathering
    iv. describe the methods of referencing documents
    v. review the importance of proof reading and editing

7. Examine types of presentations.
    i. review and discuss components of an effective presentation
    ii. review and discuss delivery techniques
    iii. review and discuss preparation & use of audio/visual aids
    iv. discuss and participate in confidence building exercises used to prepare for giving presentations

8. Interpersonal Communications.
    i. examine and apply listening techniques
    ii. discuss the importance of body language

Practical:

1. Write well-developed, coherent, unified paragraphs which illustrate the following: a variety of sentence arrangements; conciseness and clarity; and adherence to correct and appropriate sentence structure, grammar, punctuation, and mechanics.

2. Write sample letters and memos which convey: acknowledgment, routine request, routine response, complaint, refusal, persuasive request and letters of appeal.

3. Gather pertinent information, organize information into an appropriate outline & write an informal report with documented resources.
    i. edit, proofread, and revise the draft to create an effective informal report and present orally using visual aids
    ii. participate in confidence building exercises

4. Present an effective presentation.

5. Evaluate presentations.

SP 2330 Quality Assurance / Quality Control

Description:

This general studies course requires the use of basic tools and equipment and materials and supplies. It requires controlling drawings and specifications and/or calibrating measuring devices in applicable occupations. It involves interpreting standards, controlling the acceptance of raw materials, controlling quality variables and documenting the process. It includes information on quality concepts, codes and standards, documentation, communications, human resources, company structure and policy, teamwork and responsibilities.

Pre-requisites: None

Course Aims:

- to develop the skills and knowledge required to apply quality assurance/quality control procedures
- to develop an awareness of quality management principles and processes

Course Objectives (Knowledge):

1. Describe the reasons for quality assurance and quality plans.
2. Explain the relationship between quality assurance and quality control.
3. Describe quality control procedures as applied to the production and checking of engineering drawings in applicable occupations.
4. Describe quality control procedures as applied to the acceptance and checking of raw materials.
5. Explain the role of communications in quality management.
6. Explain why it is important for all employees to understand the structure of the company and its production processes.

7. Explain how human resource effectiveness is maximized in a quality managed organization.

8. Explain the role of company policy in quality management.

9. Explain the purpose of codes and standards.

10. Explain the concepts of quality.
    i. cost of quality
    ii. measurement of quality
    iii. quality control and quality assurance
    iv. elements of quality
    v. elements of the quality audit
    vi. quality standards
    vii. role expectations and responsibilities

11. Explain the structure of quality assurance and quality control.
    i. define quality assurance, quality control and documentation terminology
    ii. describe organizational charts
    iii. list the elements of a quality assurance system
    iv. explain the purpose of the quality assurance manual
    v. describe quality assurance procedures
    vi. explain the key functions and responsibilities of personnel

12. Complete quality assurance/quality control documentation.
    i. describe methods of recording reports in industry
    ii. describe procedures of traceability (manual and computer-based recording)
    iii. identify needs for quality control procedures

Major Tasks / Sub-Tasks (Skills):

1. Apply quality control to projects.
    i. follow QA/QC procedures for drawings, plans and specifications in applicable occupations
    ii. calibrate measuring instruments and devices in applicable occupations.
    iii. interpret required standards
    iv. follow QA/QC procedures for accepting raw materials
    v. carry out the project

vi. control the quality elements (variables)
vii. complete QA/QC reports

MR1220 Customer Service

Summary Description:

This course focuses on the role of providing quality customer service. It is important to have a positive attitude and the necessary skills to effectively listen and interpret customer concerns about a product, resolve customer problems, and determine customer wants and needs. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistently high level of service to the customer.

Pre-Requisites: None

Course Aims:

- define customer service
- explain why service is important
- describe the relationship between "service" and "sales"
- demonstrate an understanding of the importance of a positive attitude
- demonstrate methods of resolving customer complaints

Course Objectives (Knowledge):

1. Define quality service.
    i. identify and discuss elements of customer service.
    ii. explain the difference between service vs. sales or selling
    iii. explain why quality service is important
    iv. identify the various types of customers & challenges they may present
    v. describe customer loyalty
    vi. examine barriers to quality customer service

2. Explain how to determine customer wants and needs.
    i. identify customer needs
    ii. explain the difference between customer wants and needs
    iii. identify ways to ensure repeat business

3. Demonstrate an understanding of the importance of having a positive attitude.
    i. identify & discuss the characteristics of a positive attitude
    ii. explain why it is important to have a positive attitude
    iii. explain how a positive attitude can improve a customer's satisfaction
    iv. define perception and explain how perception can alter us and customers
    v. describe methods of dealing with perception

4. Communicating effectively with customers.
    i. describe the main elements in the communication process
    ii. identify some barriers to effective communication
    iii. explain why body language is important
    iv. define active listening and state why it is important
    v. identify and discuss the steps of the listening process
    vi. identify and discuss questioning techniques

5. Demonstrate using the telephone effectively.
    i. explain why telephone skills are important
    ii. describe the qualities of a professional telephone interaction

6. Demonstrate an understanding of the importance of asserting oneself.
    i. define assertiveness
    ii. discuss assertive techniques
    iii. explain the use of assertiveness when dealing with multiple customers

7. Demonstrate techniques for interacting with challenging customers in addressing complaints & resolving conflict.
    i. examine & discuss ways to control feelings
    ii. examine & discuss ways to interact with an upset customer
    iii. examine & discuss ways to resolve conflict/customer criticism
    iv. examine & discuss ways to prevent unnecessary conflict with customers

Practical:

1. Participate in activities to demonstrate knowledge of the course objectives.

SD1700 Workplace Skills

Description:

This course involves participating in meetings, doing safety inspections, completing employment insurance forms, writing letters of employment insurance appeal, and filing a human rights complaint. Includes information on formal meetings, unions, worker's compensation, employment insurance regulations, worker's rights and human rights.

Pre-Requisites: None

Course Aims:

Upon completion of this course, students will be able to:

- participate in meetings
- define and discuss basic concepts of:
    - unions
    - workers' compensation
    - employment insurance
    - workers' rights
    - human rights
    - workplace diversity
    - gender sensitivity

Course Objectives (Knowledge):

1. Meetings.
    i. identify and discuss meeting format and preparation required for a meeting
    ii. explain the purpose of an agenda
    iii. explain the roles and responsibilities of meeting participants
    iv. explain the purpose of motions and amendments and withdrawals
    v. explain the procedure to delay discussion of motions
    vi. explain the voting process

2. Unions.
    i. state why unions exist
    ii. give a concise description of the history of Canadian labour
    iii. explain how unions function
    iv. explain labour's structure
    v. describe labour's social objectives
    vi. describe the relationship between Canadian labour and the workers
    vii. describe the involvement of women in unions

3. Worker's Compensation.
    i. describe the aims, objectives, benefits and regulations of the Workplace Health, Safety and Compensation Commission
    ii. explain the internal review process

4. Employment Insurance.
    i. explain employment insurance regulations
    ii. describe how to apply for employment insurance
    iii. explain the appeal process
    iv. identify the components of a letter of appeal

5. Worker's Rights.
    i. define labour standards
    ii. explain the purpose of the Labour Standards Act
    iii. identify regulations pertaining to:
        - hours of work
        - minimum wages
        - employment of children
        - vacation pay
    iv. explain the purpose of the Occupational Health & Safety Act as it refers to workers' rights

6. Human Rights.
    i. describe what information cannot be included on an employment application
    ii. describe what information cannot be included in an interview
    iii. examine the Human Rights Code and explain the role of the Human Rights Commission
    iv. define harassment in various forms and identify strategies for prevention

7. Workplace Diversity.
    i. define and explore basic concepts and terms related to workplace inclusively including age, race, culture, religion, socio-economic, sexual orientation with an emphasis on gender issues and gender stereotyping

8. Gender Sensitivity.
    i. explore gender and stereotyping issues in the workplace by identifying strategies for eliminating gender bias

Practical:

1. Prepare an agenda.

2. Participate in a meeting.

3. Analyze a documented case of a human rights complaint with special emphasis on the application, time frame, documentation needed, and legal advice available.

SD 1710 Job Search Techniques

Description:

This course is designed to give students an introduction to the critical elements of effective job search techniques.

Course Outcomes:

Upon completion of this course, students will be able to:

- demonstrate effective use of job search techniques

Pre-Requisites: None

Objectives and Content:

1. Identify and examine employment trends and opportunities.

2. Identify sources that can lead to employment.

3. Access and review information on the Newfoundland and Labrador Apprenticeship and Certification Web site and the Apprenticeship Employment Gateway.

4. Analyze job ads and discuss the importance of fitting qualifications to job requirements.

5. Identify and discuss employability skills as outlined by the Conference Board of Canada.

6. Discuss the necessity of fully completing application forms**.**

7. Establish the aim/purpose of a resume.

8. Explore characteristics of effective resumes, types of resumes, and principles of resume format.

9. Explore characteristics of an effective cover letter.

10. Identify commonly asked questions in an interview.

11. Explore other employment related correspondence.

12. Explore the job market to identify employability skills expected by an employer.

13. Conduct a self-analysis and compare with general employer expectations.

14. Discuss the value of establishing and maintaining a portfolio.

Practical:

1. Complete sample application forms.

2. Write a resume.

3. Write an effective cover letter.

4. Establish a portfolio.

5. Write out answers to commonly asked questions asked during interviews.

6. Identify three potential employers from the Apprenticeship Employment gateway, Apprenticeship and Certification website.

SD 1720 Entrepreneurial Awareness

Description:

This course is designed to introduce the student to the field of entrepreneurship, including the characteristics of the entrepreneur, the pros and cons of self-employment, and some of the steps involved in starting your own business.

Course Outcomes:

Upon completion of this course, the student will be able to:

- identify the various types of business ownership, the advantages and disadvantages of self-employment and identify the characteristics of an entrepreneur
- state the purpose and identify the main elements of a business plan

Pre-Requisites: None

Objectives and Content:

1. Explore Self-Employment: An alternative to employment.
    i. identify the advantages and disadvantages of a self-employment vs. regular employment
    ii. differentiate between an entrepreneur and a small business owner
    iii. evaluate present ideas about business people

2. Identify and discuss various types of business ownership.
    i. explore the characteristics of entrepreneurs
    ii. identify characteristics common to entrepreneurs
    iii. compare one's own personal characteristics with those of entrepreneurs
    iv. examine one's present ideas about business people

3. Identify business opportunities.
    i. distinguish between an opportunity and an idea
    ii. examine existing traditional and innovative business ventures
    iii. identify and summarize the role of various agencies that support business development

4. Review the Entrepreneurial Process.
    i. explain the entrepreneurial process
    ii. describe the purpose of a business plan

TS1520 Workplace Hazardous Materials Information System (WHMIS)

Description:

This course is designed to give participants the knowledge and skills necessary to define WHMIS, examine hazard identification and ingredient disclosure, explain labeling and other forms of warning, and introduce material safety data sheets (MSDS).

Pre-Requisites: None

Course Outcomes:

Upon successful completion of this course, the apprentice will be able to:

- interpret and apply the Workplace Hazardous Materials Information System (WHMIS) Regulation under the Occupational Health and Safety Act

Required Knowledge and Skills:

1. Define WHMIS safety.
    i. rational and key elements
    ii. history and development of WHMIS
    iii. WHMIS legislation
    iv. WHMIS implementation program
    v. Definitions of legal and technical terms

2. Examine hazard identification and ingredient disclosure.
    i. prohibited, restricted and controlled products
    ii. classification and the application of WHMIS information requirements
    iii. responsibilities for classification
        - the supplier
        - the employer
        - the worker - Classification: rules and criteria
        - information on classification
        - classes, divisions and subdivision in WHMIS
        - general rules for classification
        - class A - compressed gases

- class B - flammable and combustible materials
- class C - oxidizing material
- class D - poisonous and infectious material
- class E - corrosive material
- class F - dangerously reactive material

iv. products excluded form the application of WHMIS legislation
- consumer products
- explosives
- cosmetics, drugs, foods and devices
- pest control products
- radioactive prescribed substances
- wood or products made of wood
- manufactured articles
- tobacco or products of tobacco
- hazardous wastes
- products handled or transported pursuant to the Transportation of Dangerous Goods (TDG) Act

v. comparison of classification systems - WHMIS and TDG

vi. general comparison of classification categories

vii. detailed comparison of classified criteria

3. Explain labeling and other forms of warning.

i. definition of a WHMIS label
- supplier label
- workplace label
- other means of identification

ii. responsibility for labels
- supplier responsibility
- employer responsibility
- worker responsibility

iii. introduce label content, design and location
- supplier labels
- workplace labels
- other means of identification

4. Introduce material safety data sheets (MSDS).

i. definition of a material safety data sheet

ii. purpose of the data sheet

iii. responsibility for the production and availability of data sheets
- supplier responsibility
- employer responsibility
- workers responsibility

Practical:

Practical skills enhance the apprentices' ability to meet the objectives of this course. The learning objectives outlined below are mandatory in Newfoundland and Labrador, but are provided as suggestions for Nova Scotia, Prince Edward Island and New Brunswick.

1. Locate WHMIS label and interpret the information displayed.

2. Locate a MSDS sheet for a product used in the workplace and determine what personal protective equipment and other precautions are required when handling this product.

SUGGESTED RESOURCES:

1. WHMIS Regulation

2. Sample MSDS sheets

OL1600 Traffic Control Person

Pre-Requisites: None

Course outcomes:

Upon successful completion of this course, the apprentice will:

- explain the importance of traffic control
- be able to apply the methods and techniques of stopping, slowing and directing traffic

Theory:

1. Explain the importance of signalers.
   i. responsibility
   ii. warn the public

2. Identify where and when signalers are needed.
   i. safe travel path
   ii. construction equipment

3. Define signaler's uniforms and codes.
   i. qualifications
   ii. signaling procedures

4. Explain proper dress and equipment for signalers.
   i. daylight
   ii. dark

5. Identify proper position for signaler.
   i. traffic lane
   ii. additional signalers

6. Identify examples of types of communication between signalers.
   i. visual
   ii. field telephone
   iii. traffic light system

iv. two-way radios

7. Define standards for size and type of paddle.
   i. standard paddle
   ii. mounted on staff

8. Demonstrate how to stop traffic.
   i. stop traffic in daytime
   ii. stop traffic at night

9. Demonstrate how to direct traffic.
   i. slow traffic
   ii. move traffic

10. Outline general instructions for Signalers.
    i. advance warning signs
    ii. do's
    iii. don'ts

Practical:

1. Direct traffic.

Heavy Equipment List

HE1501 Bulldozers

Description:

This course in heavy equipment operation requires the use of an appropriate environment, and equipment. It involves inspection, start-up, manoeuvring, planning strategies, cutting and spreading, winching, ripping, pushing, sloping and benching, excavating and stripping and shut-down. It includes information on bulldozer operation and maintenance. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-requisites: HE1101, Co-requisite MA1060

Course Aims:

- to develop the skills and knowledge required for the operation of bulldozers with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on Bulldozers using the operator's guide.
2. State the functions of the gauges.
3. Identify controls on Bulldozers using operator's guide and/or information sheet.
4. Match Bulldozer controls to their correct functions.
5. Identify the components of a Bulldozer using information sheet or operator's guide.
6. List the common types of materials used in highway construction and at what stage of

construction would these materials be used.

7. List safety factors to consider when winching a load.

8. Describe the difference between a power controlled and direct drive winch.

9. List appropriate gear range and speed for ripping different materials.

10. List the difference between single shank and multi shank (Parallelogram) rippers.

11. Identify vegetation common to areas of unstable terrain.

12. Explain the term floatation in relation to type of machine used on various soil conditions.

13. Select from a list grouser pads used to improve floatation.

14. State the need for proper drainage.

15. Compare, using a chart, the difference in the weight of dry versus wet material.

16. List safety procedures to use when operating bulldozer as a pusher.

17. List safety procedures used when using bulldozer as a pusher in a tandem ripping application.

18. List the steps in cutting and building a slope.

19. List safety procedures to use when operating a tractor on a slope.

20. Define the meaning of 2 – 1 and 3 - 1 slopes.

21. List two machines used in stripping of right-of-way.

22. List three methods used in stripping of right-of-way; explain the reason for using each method.

23. State suggestions for effective dozer operation when moving overburden.

24. List the width of stripping required for a 79, 80, and 90km/h highway.

Major Tasks / Sub-Tasks (Skills):

1. Interpret construction drawings and markings.
    i. study drawings of a 90 km/h and a 80 km/h cross section and list their differences
    ii. record the width of right-of-way, road top, final construction and ditches using a cross section drawing of a 90 km/h highway
    iii. list the sizes and types of materials used in final construction of a 90 km/h highway
    iv. list eight of the survey markings used in road construction noting the abbreviations and symbol for each
    v. list the following using a drawing of a municipal service plan for water and sewer installation
    vi. type of pipe used
    vii. size of pipe used

2. Identify gauges, controls and components using equipment with the latest technology.
    i. identify all gauges on a tractor using the operator's guide
    ii. state the functions of the gauges
    iii. identify controls on a dozer using the operator's guide and/or information sheet
    iv. match dozer controls to their corrective action
    v. identify the components of a dozer using information sheet or operator's guide
    vi. demonstrate the ability to identify all gauges, controls, and components

3. Perform walk-around and pre-start checks.
    i. complete the walk-around inspection using the walk-around checklist provided
    ii. perform minor repairs and adjustments if required as determined from the walk-around inspection
    iii. report major repairs and adjustments required to higher or proper authority as determined from the walk-around inspection
    iv. complete the pre-start checks using the pre-start checklist provided
    v. perform minor maintenance, servicing, and topping-up of various fluids and liquids in the appropriate compartments and locations, as determined from the pre-start checks

4. Perform start-up and shut-down procedures.
    i. start up correctly and safely a tractor powered by a diesel engine under normal and cold temperature conditions
    ii. check all systems after the engine is running, confirming that they are in safe operating range
    iii. park equipment properly
    iv. correctly shut-down tractor at end of shift
    v. report any repairs or servicing verbally to the instructor

5. Perform basic manoeuvring skills.
    i. drive the tractor in a safe manner, displaying smooth starts and stops
    ii. drive the tractor displaying smooth shifts, and steering

6. Perform cutting and spreading of materials.
    i. check work area for unusual conditions
    ii. start out with machine in a level position
    iii. operate bulldozer controls in quick short movements
    iv. use of decelerator to control machine spread
    v. cut material to within 75mm of grade
    vi. spread material to within 75mm of grade

7. Perform ripping operations.
    i. identify components of front and rear mounted ripper attachments
    ii. match ripper controls to their correct functions
    iii. select proper tip recommended for use in loose, hard packed, and abrasive materials

8. Construct slopes and benches.
    i. demonstrate the ability to cut and build a 2 - 1 slope

9. Perform excavations.
    i. dig basement to grade level as indicated on the grade stake
    ii. store materials that should be saved (topsoil)
    iii. protect trees and shrubs
    iv. produce a finished excavation in good enough order to accommodate the desired specifications without extra labour being involved

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1511 Graders

Description:

This course in heavy equipment requires the use of heavy equipment and an appropriate environment. It involves inspecting, start-up/shut-down, maneuvering, planning strategies, grading, scarifying, spreading, ditching, shouldering, finishing and removing snow. It includes information on operations, techniques, attachments road systems and construction drawings. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-requisites: HE1101, Co-requisite MA1060

Course Aims:

- to develop the skills and knowledge required for the operation of graders with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on a grader using the diagram and/or operator's guide manual.
2. State the functions of all gauges.
3. Identify controls on a grader using operator's guide manual.
4. Match grader controls to their correct functions.
5. Identify the components of a grader using the information sheet and/or operator's guide manual.
6. List 3 methods or procedures used in maintaining roads with motor graders.

7. State 5 blade positions used in road maintenance.

8. Identify components of laser/GPS levelling equipment.

9. List steps for effective grader operation when scarifying materials.

10. Given description of existing road conditions, describe the procedure to follow when spreading material to form a crown on a roadway.

11. List two types of ditching patterns.

12. List the steps in proper setting of blade for V-ditch and flat-bottom ditching.

13. Identify common attachments used in snow removal from a drawing

14. Describe the purpose of the side mounted wing.

15. Describe the purpose of the front mounted plow.

16. Match hydraulic controls to their correct functions.

17. Identify common attachments.

Major Tasks / Sub-Tasks (Skills):

1. Identify grader gauges, controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls and components at the machine

2. Perform walk around and pre-start checks.
    i. complete the walk-around inspection using the check list and the operator's guide booklet provided
    ii. complete the minor repairs and adjustments if required

iii. report major problems if any to proper authority
iv. complete the pre-start check using the check list and the operator's guide booklet provided
v. perform minor maintenance, servicing and topping up of various fluids and liquids in appropriate compartment

3. Perform start-up and shut-down procedures.
   i. start up correctly and safely a machine powered by a diesel engine
   ii. check all systems after the engine is running to establish that they are operational
   iii. correctly shut down grader at the end of shift
   iv. park equipment properly
   v. report any repairs, or servicing verbally to the instructor

4. Perform basic manoeuvring skills.
   i. drive the grader in a safe manner, displaying smooth starts and stops
   ii. drive the grader displaying smooth shifting and steering
   iii. drive the grader with blade and scarifier attachments, raised and placed in a position so as not to obstruct movement of grader

5. Maintain roads.

6. Perform scarifying operations.
   i. demonstrate the ability to scarify a section of hard packed road surface

7. Spread materials.
   i. assess the work area, and identify grade stake markings and how they relate to the job at hand
   ii. spread material with allowable tolerance of 5 cm (2 inches) above or below grade

8. Construct ditches.
   i. set the blade at proper angle to dig a V-ditch
   ii. select proper speed and gear range
   iii. dig a V-ditch 50m long and 25cm deep

iv. cut material from shoulder--spread toward road centre

9. Perform shouldering operations.
   i. demonstrate the ability to assess the area, identify grade stake markings
   ii. set blade in proper position to spread material
   iii. control blade down pressure to avoid damaging pavement
   iv. select proper gear range and engine speed for this job

10. Perform finish work operations.
   i. assess the work area and identify grade stake markings and how they relate to the job
   ii. recognize different materials, (pit run, and crushed stone) and know how the machine should be used to spread materials
   iii. spread materials with allowable tolerance of 3cm (1 inch) above or below grade
   iv. demonstrate the ability to remove snow with a grader using the regular blade

11. Operate grader using various attachments.

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1521 Backhoes

Description:

This course in heavy equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, setting-up, planning strategies, ditching, excavating, loading trucks, lifting, sloping and benching, and stripping. It includes information on operations, techniques, attachments, road systems and construction drawings. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-Requisites: HE1101, Co-requisite MA1060

Note: Where a student has completed the Excavator course, a credit of 15 hours will be awarded towards the backhoe operational time requirement, provided that the backhoe on which the student operates is equipped with joystick controls. This would mean that the student would require only 45 hours of operational time on the joystick-controlled backhoe as opposed to 60 hours. As well, where an excavator is available, the student may operate and receive credit up to 15 hours towards the backhoe operational time requirement.

Course Aims:

- to develop the skills and knowledge required for operating backhoes with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on a backhoe using the operator's guide.

2. State the functions of the gauges.

3. Identify all controls on a backhoe using operator's guide and/or information.

4. Match backhoe controls to their correct functions.

5. Identify the components of a backhoe using the operator's guide and/or information sheet.

6. List three reasons why positioning of bach in relation to work is important.

7. State three advantages of setting up bach using the tripod method.

8. List three safety hazards associated with setting up machine on sloping terrain and unstable soil.

9. Name four controls used in setting up machine on level ground.

10. List four types of ditching patterns that may be used when ditching.

11. List three steps in planning the job when ditching.

12. List two different methods that may be used when setting up the machine for ditching.

13. List the various attachments that can be installed and their uses on the machine you operate.

14. List safety rules to follow when operating hoisting equipment.

15. List the steps in selection of cables and proper hook-up of backhoe to pipe.

16. List points to consider to prepare the ditch floor when installing underground services.

17. State the procedures to follow when backfilling underground services.

18. Explain the process of protecting trees and shrubs.

19. State safety rules for loading trucks with loader section of backhoe.

20. List four techniques that should improve the loading cycle.

21. List four safety factors to consider when using a backhoe for crane work.

22. List responsibilities expected from an operator in lifting and moving heavy objects.

23. Check cable or chain hookup to insure load can be handled safely.

24. List the steps and tools needed to change a bucket.

25. List the different buckets and their uses.

26. State the dangers involved in removing and installing bach attachment.

27. Be able to determine when it is better to change attachments rather than bring in a different machine to complete the job.

28. Be familiar with the procedures to install an attachment whether it is mounted mechanically or hydraulically.
    i. various buckets
    ii. boom extensions
    iii. impactor or demolition hammer

29. Explain the process for changing a bucket.

Major Tasks / Sub-Tasks (Skills):

1. Identify gauges, controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls and components of the machine
2. Perform walk around and pre-start checks.
    i. complete the walk-around inspection using the check list and the operator's guide manual
    ii. complete the minor repairs and adjustments if required
    iii. report major problems to proper authority
    iv. complete the pre-start check using the check list and the operator's guide manual
    v. perform minor maintenance, servicing and topping up of fluids and liquids in the appropriate compartment

3. Perform start-up and shut-down procedures.
    i. start-up correctly and safely a machine powered by a diesel engine using the start-up check list and Operators guide
    ii. check all systems after the engine is running to establish that they are operational
    iii. park equipment properly
    iv. correctly Shut-down bach at the end of the shift
    v. log any repair or servicing requirements

4. Perform basic manoeuvring skills.
    i. drive the bach in a safe manner displaying smooth starts and stops
    ii. drive the bach displaying smooth shifts, and steering

5. Set up bach on level ground.

6. Set up bach on sloped ground.

7. Perform ditching operations.
    i. excavate a number of ditches with different layout patterns (number and
    ii. shape of layout to be decided by the Instructor)

8. Install underground services.
    i. prepare ditch for installing underground services
    ii. demonstrate hook up of cable sling to pipe and loader bucket
    iii. install pipe in bottom of ditch
    iv. backfill pipe

9. Perform excavations.
    i. recognize dangerous operating situations involved in basement excavation
    ii. dig basement to size and depth as indicated on the grade stakes
    iii. determine which materials should be saved (conserve and store topsoil)
    iv. finish the floor or the basement to within (plus or minus) 12cm

10. Load trucks. Demonstrate the ability to:
    i. fill the bucket
    ii. travel with bucket loaded
    iii. properly dump the bucket
    iv. load trucks from a stockpile
    v. maintain an even and smooth pit floor

11. Perform light duty crane operation.
    i. perform crane work in accordance with the Occupational, Health and Safety Regulations
    ii. lift and manoeuvre objects safely without damaging property

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1531 Front End Loaders

Description:

This course in heavy equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, planning strategies, digging and dumping, excavating, loading trucks, dozing, lifting, sloping and benching, stockpiling and removing snow. It includes information on operations, techniques, attachments, road systems and construction drawings. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-requisites: HE1101, Co-requisite MA1060

Course Aims:

- to develop the skills and knowledge required for operating front end loaders with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify gauges, controls and components.
    i. identify all gauges on a loader using the operator's guide and/or information sheet
    ii. state the functions of all gauges

2. Identify all controls on a loader using operator's guide and/or information sheet.

3. Match loader controls to their correct functions.

4. Identify the components of a loader using the operator's guide.

5. State safety rules that the operator must use when loading materials into trucks.

6. List four techniques that can improve the loading cycle.

7. State the proper procedures for loading various types of materials.

8. Define the term "stockpile" and list the (10) ten specific directives found in the specifications for building a stockpile, as laid down by the Province of Newfoundland Department of Transportation, Division 3 -310.10.

9. List safety rules to follow when using the loader for hoisting.

10. List the steps in selection of cables and proper hookup of loader to pipe.

11. List point to consider to prepare the excavation floor when installing underground services.

12. State the procedures to follow when backfilling underground services.

13. Identify common attachments used in snow removal.

14. Describe the purpose of a side mounted wing.

15. Describe the purpose of a front mounted plow.

16. Match hydraulic controls to their correct functions.

17. List the various attachments that can be installed and their uses on the machine you operate. (Examples: straight bucket, rock bucket, 4 in 1 bucket (multi purpose), log fork, ripper, bach, side wing (snow removal) and snow blade).

18. Be able to determine when it is better to change attachments rather than bring in a different machine to complete the job.

19. Be familiar with the procedures to install an attachment whether it is mounted mechanically or hydraulically.

Major Tasks / Sub-Tasks (Skills):

1. Identify gauges controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls, and components at the machine

2. Perform walk-around and pre-start checks.
    i. complete the walk-around inspection using the check list and the Operator's Guide book provided
    ii. perform minor repairs and adjustments if required
    iii. report major problems to proper authority
    iv. complete the pre-start check using the checklist and the Operator's Manual as a guide
    v. top up any compartment with the proper oil

3. Perform start-up and shut-down procedures.
    i. start up correctly and safely a loader powered by a diesel engine (under normal and cold weather conditions)
    ii. check all systems after the engine is running, confirming that all systems are in safe operating range
    iii. park equipment properly
    iv. correctly shut down loader at end of shift
    v. log any repair or servicing requirements

4. Perform basic manoeuvring skills.
    i. drive the machine in a safe manner displaying smooth starts and stops
    ii. drive machine displaying smooth shifting and steering
    iii. drive the loader with bucket close to ground for good visibility and stability

5. Perform digging/dumping operations
    i. fill the bucket
    ii. travel with bucket loaded

iii. dump material from bucket
iv. keep floor of pit smooth and level
v. keep dumped material in a neat and tidy pile

6. Perform dozing operations.
   i. check work area for unusual ground conditions
   ii. use correct work pattern when starting to spread materials
   iii. spread and level materials maintaining a smooth finish
   iv. avoid spinning of tires or tracks while dozing
   v. perform dumping and spreading while moving

7. Load trucks.
   i. demonstrate ability to load trucks according to following procedures:
   ii. select correct gear range for ground conditions and materials being loaded
   iii. fill the bucket
   iv. position the loader so the truck can be back under the lift arms
   v. dump materials into truck
   vi. load a number of trucks from a pit or stockpile. Number of loads to be decided by instructor depending on students progress
   vii. maintain a level and smooth pit

8. Perform excavations.
   i. dig basement to grade level as indicated on the grade stake
   ii. store materials that should be saved (conserve and store topsoil)
   iii. protect trees and shrubs
   iv. complete a finished excavation in good enough order to accommodate the desired specifications without extra labour being involved - size of excavation or footing to be determined by instructor and student

9. Build stockpile.
   i. demonstrate the knowledge of procedures and the basic skills required to build a stock pile

10. Install underground services.
    i. prepare ditch for installing underground services
    ii. demonstrate hookup of cable sling to pipe and loader bucket
    iii. install pipe in bottom of ditch
    iv. backfill pipe

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1541 Tandem Dump Trucks

Description:

This course in tandem dump truck operation requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, changing gears, manoeuvring, positioning, hauling and dumping, and driving. It includes information on operations and techniques. It is intended that this course will address the new technologies evolving in the industry**.**

Pre-requisites: HE1101, Co-requisite MA1060

Note: Where a student has completed the Off-highway Truck course, a credit of 15 hours will be awarded towards the Tandem Dump Truck operational time requirement. This would mean that the student would require only 45 hours of operational time on the Tandem Dump Truck as opposed to 60 hours. As well, where an off-highway truck is available, the student may operate and receive credit up to 15 hours towards the tandem dump truck operational time requirement.

Course Aims:

- to develop the skills and knowledge required for operating tandem dump trucks with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on a tandem dump truck using the Operators Guide and/or Information Sheet.

2. State the functions of the gauges.

3. Identify all control on a tandem dump truck using Operators Guide and/or Information Sheet.

4. Match tandem dump truck controls to their correct functions.

5. Identify the components of a truck using the Operators Guide and/or Information Sheet.

6. Describe proper shifting procedure.

7. Describe the shift control lever.

8. State the steps involved in this operation of a standard shift transmission.

9. State the procedures for double clutching on the upshift and downshift.

10. State the operation of the clutch brake.

11. State how to prevent engine over-speeding while driving.

Major Tasks / Sub-Tasks (Skills):

1. Identify gauges, controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls and components at the machine
2. Perform walk around and pre-start checks.
    i. complete the walk around inspection using the check list and the operators guide book
    ii. perform the minor repairs and adjustments that may be necessary
    iii. report minor or major problems to instructor

iv. complete the pre-start check using the check list and operators manual as a guide
v. perform minor maintenance, servicing and topping up of various fluids, oils and liquids in appropriate compartments

3. Perform start-up and shut-down procedures.
   i. start up correctly and safely a machine powered by a diesel engine using the start up check list and operators guide
   ii. check all systems after the engine is running to establish that they are operational
   iii. park equipment properly
   iv. correctly shut down truck at the end of shift
   v. log any repair or servicing requirements

4. Perform basic manoeuvring skills through an established course.
   i. drive the truck in a safe manner displaying smooth starts and stops
   ii. drive the truck displaying smooth shifting and steering
   iii. demonstrate the ability to complete:
      - forward and reverse clearance through an alley
      - forward, stop and backing through 30m alley
      - forward Zig-Zag
      - off-set alley
      - overhead clearance

5. Perform back-up operations.
   i. observe area to be backed into while still going forward and state any potential hazards
   ii. warn or alert loading and dumping personnel of his/her intentions
   iii. back-up vehicle in a straight line
   iv. select proper axle and/or transmission range
   v. back into position for loading and dumping using rear view mirrors
   vi. state the minimum frontal and side clearance required for the driver of a tandem truck to see personnel in his/her area

6. Operate standard shift transmission.
    i. demonstrate proper shift sequence

7. Haul and dump materials.
    i. position truck at pit location
    ii. haul material to dump site
    iii. observe traffic patterns and driving speed for road conditions
    iv. observe overhead obstruction
    v. operate controls and dump materials while maintaining level truck position

8. Drive in traffic.
    i. put vehicle in motion
    ii. select and shift gears
    iii. co-ordinate the use of the clutch and accelerator
    iv. handle the steering wheel
    v. regulate speed with brakes
    vi. regulate speed with transmission
    vii. use signals in the proper manner
    viii. drive in proper lane
    ix. observe traffic signs and speed limits as posted
    x. operate in reverse with mirrors and using a spotter
    xi. secure vehicle in position designated by instructor (parallel or perpendicular)

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1551 Off-Highway Trucks

Description:

This course in heavy equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, changing gears, manoeuvring, positioning, hauling and dumping, and driving. It includes information on operations and techniques. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-requisites: HE1101, Co-requisite MA1060

Note: Where a student has completed the Tandem Dump Truck course, a credit of 15 hours will be awarded towards the Off-highway Truck operational time requirement. This would mean that the student would require only 45 hours of operational time on the Off-highway Truck as opposed to 60 hours. As well, where a tandem dump truck is available, the student may operate and receive credit up to 15 hours towards the off-highway truck operational time requirement.

Course Aims:

- to develop the skills and knowledge required for operating off-highway trucks with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on an Off Highway Truck using the Operators Guide and/or

Information Sheet.

2. State the functions of the gauges.

3. Identify all control on an Off Highway Truck using Operators Guide and/or Information Sheet.

4. Match Off Highway Truck controls to their correct functions.

5. Identify the components of a truck using the Operators Guide and/or Information Sheet.

6. Describe proper shifting procedure.

7. Describe the shift control lever, retarder and shift light.

8. State how to prevent engine over-speeding while driving.

Major Tasks / Sub-Tasks (Skills):

1. Identify gauges, controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls and components at the machine

2. Perform walk around and pre-start checks.
    i. complete the walk around inspection using the check list and the operators guide book
    ii. perform the minor repairs and adjustments that may be necessary
    iii. report minor or major problems to the appropriate authority
    iv. complete the pre-start check using the check list and operators manual as a guide
    v. perform minor maintenance, servicing and topping up of various fluids, oils and liquids in appropriate compartments

3. Perform start-up and shut-down procedures.
    i. start up correctly and safely a machine powered by a diesel engine using the start up check list and operators guide
    ii. check all systems after the engine is running to establish that they are operational
    iii. park equipment properly
    iv. correctly shut down truck at the end of shift
    v. log any repair or servicing requirements

4. Perform basic maneuvering skills through an established course.
    i. drive the truck in a safe manner displaying smooth starts and stops
    ii. drive the truck displaying smooth shifting and steering
    iii. demonstrate the ability to complete:
        - forward and reverse clearance through an alley
        - forward, stop and backing through an alley
        - forward zig-zag
        - off-set alley
        - overhead clearance

5. Perform back-up operations.
    i. observe area to be backed into while still going forward and state any potential hazards
    ii. warn or alert loading and dumping personnel of his/her intentions
    iii. back-up vehicle in a straight line
    iv. select proper axle and/or transmission range
    v. back into position for loading and dumping using rear view mirrors
    vi. state the minimum frontal and side clearance required for the driver of an Off Highway Truck to see personnel in his/her area

6. Operate power shift transmission.
    i. demonstrate proper shift sequence

7. Haul and dump materials.
    i. position truck at pit location
    ii. haul material to dump site

iii. observe traffic patterns and driving speed for road conditions
iv. observe overhead obstruction
v. operate controls and dump materials while maintaining level truck position

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

HE1561 Excavators

Description:

This course in heavy equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, setting-up, planning strategies, ditching, excavating, loading trucks, lifting, sloping and benching, and stripping. It includes information on operations, techniques, attachments, road systems and construction drawings. **It is intended that this course will address the new technologies evolving in the industry.**

Pre-requisites: HE1101, Co-requisite MA1060

Note: Where a student has completed the Backhoe course with operational time exclusively on a machine with joystick controls, a credit of 15 hours will be awarded towards the excavator operational time requirement. This would mean that the student would require only 45 hours of operational time on the excavator as opposed to 60 hours. As well, where such a backhoe is available, the student may operate and receive credit up to 15 hours towards excavator operational time requirement.

Course Aims:

- to develop the skills and knowledge required for operating excavators with respect to various codes and regulations
- to practice safety in potentially harmful situations
- to develop an appreciation for conservation and environmental issues

Course Objectives (Knowledge):

1. Identify all gauges on Excavator using the operator's guide.
2. State the functions of the gauges.
3. Identify controls on an Excavator using operator's guide and/or information sheet.
4. Match Excavator controls to their correct functions.
5. Identify the components of an Excavator using information sheet or operator's guide.
6. List safety rules to follow when operating hoisting equipment.
7. List the steps in selection of cables and proper hook-up of excavator to pipe.
8. List points to consider to prepare the excavation floor when installing underground services.
9. State the procedures to follow when backfilling underground services.
10. State safety rules for trenching.
11. List types of trench patterns that may be used when trenching.
12. List steps in planning the job when trenching.
13. List four safety factors to consider when using an excavator for crane work
14. List responsibilities expected from an operator in lifting and moving heavy objects.
15. List the various attachments that can be installed and their uses on the machine you operate.
16. List the steps in cutting and shaping a slope.

17. List safety procedures to use when operating an excavator on a slope.

18. Define the meaning of 2:1 and 3:1 slopes.

19. List two machines used in stripping of right-of-way.

20. List three methods used in stripping of right-of-way; explain the reason for using each method.

21. State suggestions for effective excavator operation when moving overburden.

22. List the width of stripping required for a 79, 80, and 90km highway.

23. Be able to determine when it is better to change attachments rather than bring in a different machine to complete the job.

24. Be familiar with the procedures to install an attachment whether it is mounted mechanically or hydraulically.

25. Explain the process of stripping right-of-way.

26. Explain concerns and cautions with respect to operating an excavator in unstable soil, using mats.

Major Tasks / Sub-Tasks (Skills):

1. Identify excavator gauges, controls and components using equipment with the latest technology.
    i. demonstrate the ability to identify all gauges, controls and components at the machine

2. Perform walk around and pre-start checks on excavator.
    i. complete the walk-around inspection using the check list and the operator's guide manual

ii. complete the minor repairs and adjustments if required
iii. report major problems to the proper authority
iv. complete the pre-start check using the check list and the operator's guide manual
v. perform minor maintenance, servicing and topping up of fluids and liquids
in appropriate compartment

3. Perform start-up and shut-down procedures on excavator.
   i. start-up correctly and safely a machine powered by a diesel engine using the start-up checklist and operator's guide
   ii. check all systems after the engine is running to establish that they are operational
   iii. park equipment correctly
   iv. correctly shut down excavator at the end of shift
   v. report any repairs or servicing verbally to his/her instructor

4. Perform basic excavator manoeuvring skills.
   i. drive the excavator in a safe manner, displaying smooth starts and stops
   ii. drive the excavator displaying smooth shifts and steering (avoid oversteering)

5. Load trucks.
   i. position truck and excavator for efficient loading
   ii. load a truck from a excavator
   iii. load a truck from stockpile
   iv. load a truck from the top of a pit

6. Install underground services.
   i. prepare ditch for installing underground services
   ii. demonstrate hook up of cable sling to pipe and excavator bucket
   iii. install pipe in bottom of ditch
   iv. backfill pipe

7. Perform trenching operations.
    i. excavate a number of trenches of various size and layout as decided by instructor

8. Excavate footings/basements.
    i. recognize dangerous operating situations involved in basement excavation
    ii. excavate basement to size and depth as indicated on the grade stakes
    iii. store materials that should be saved (conserve and store topsoil)
    iv. protect trees and shrubs
    v. finish the floor of the basement to within (plus /minus) 12cm

9. Perform crane operations.
    i. check cable or chain hook-up to insure load can be handled safety
    ii. perform crane work in accordance with the Occupational, Health and Safety Regulations
    iii. lift and manoeuvre objects safely without damaging property

10. Construct slopes and benches.
    i. demonstrate the ability to cut and build a 2:1 slope

Evaluation:

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

REQUIRED WORK EXPERIENCES

Provincial Certification requires that all Apprentices obtain appropriate industry based work experiences. The required work experiences identified in this section are written in the broadest terms so as to ensure the apprentices receive experiences in each of the required areas and to ensure that employers have a degree of flexibility in applying the terms and conditions implicit in a Contract of Apprenticeship. What is important is that both the apprentice and the employer understand the obligations laid out in this plan of training which is designed to ensure that at the completion of both the technical training and the required hours of work experience the apprentice has both the knowledge and the skills necessary to successfully complete the Provincial Examination.

Required Work Experiences:

Follow safety regulations, assess variable conditions (road, vehicle, driver, weather, power lines, plan strategies, operate equipment, prevent emergencies.

Follow manufacturer's recommendations for the maintenance of equipment and adjustment of components.

Become aware of, interpret, integrate, and gain experience with the implementation of regulations and emergency procedures.

Inspect, start up, and manoeuvre bulldozers; plan strategies, cut and spread, winch, rip, push, slope and bench, excavate and strip, and shut down machine.

Inspect, start up, and manoeuvre graders; plan strategies, grade, scarify, spread, ditch, shoulder, finish, remove snow, and shut down machine.

Inspect, start up, and manoeuvre excavator; plan strategies, ditch, excavate, load trucks, lift, slope and bench, strip, and shut down machine.

Inspect, start up, and manoeuvre backhoe; plan strategies, ditch, excavate, load trucks, lift, slope and bench, strip, and shut down machine.

Inspect, start up, and manoeuvre front end loaders; plan strategies, dig and dump, excavate, load trucks, doze, lift slope and bench, stockpile, remove snow, and shut down machine.

Inspect, start up, and manoeuvre off road / tandem dump trucks; plan strategies, change gears, position, haul, dump, drive, and shut down machine.

Apprenticeship Curriculum Standard Evaluation Form

Thank you for your interest in the development and revision of this document. Upon review of this document, please record your feedback in relation to the following items:

- unit division and organization
- relevancy of the content
- errors or omissions
- other suggestions for improvement and consideration

Overall comments are to be entered on this evaluation form and specific changes are to be entered directly on the document in the relevant area(s). When making proposed correction(s) in the curriculum standard, please use **red** ink. When all feedback has been recorded, return this evaluation form along with the curriculum standard to the office noted at the bottom of the page.

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Trade**:** **Heavy Equipment Operator**

Full Name: _____

Type of Position: (Trade Practitioner, Instructor, etc)_____

Company: _____

Address: _____

Telephone: _____

COMMENTS: (Use a separate sheet of paper if necessary)

Return Evaluation Form and Curriculum Standard to:

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