

**A PLAN OF TRAINING  
FOR  
MOBILE CRANE OPERATOR  
OCCUPATION**

**Approved by  
Provincial Apprenticeship Board**

**April, 1997**  
Revised June, 2000

## 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 Contract of Apprenticeship 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 an interprovincial examination. Passing this examination will result in the apprentice receiving Red Seal Certification which gives the journey person national mobility of 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 Red Seal 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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Chair, Provincial Apprenticeship Board

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Minister of Education

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## CONDITIONS GOVERNING APPRENTICESHIP TRAINING

### 1.0 GENERAL

The following general conditions will apply to all apprenticeship training programs approved by the Provincial Apprenticeship Board in accordance with the Apprenticeship Act. Where an occupation requires additional conditions, these will be noted in the specific plan of training for that occupation. In no case should there be a conflict between these conditions and the additional requirements specified in certain plans of training.

### 2.0 ENTRANCE REQUIREMENTS

2.1 Entry into the occupation as an apprentice requires:

The completion of designated first year courses specific to the occupation

OR

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

OR

Enrolment in a program of studies that includes all entry and advanced level skills and required work experiences as approved by the Provincial Apprenticeship Board.

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 plans 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 towards the apprenticeship program may be awarded to an apprentice for previous work experience and/or training as validated through prior learning assessment.

2.4 A Registration 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 Provincial Apprenticeship Board one week notice in writing.

### 4.0 TERMINATION OF A MEMORANDUM OF UNDERSTANDING

After the probationary period referred to in Section 3.0 herein, the memorandum of understanding may be terminated by the Board by mutual consent of the parties thereto or cancelled by the Board for proper and sufficient cause in the opinion of the Board.

## 5.0 APPRENTICESHIP PROGRESSION SCHEDULE AND WAGE RATES

### 5.1 Progression Schedule

<b>7200 Hour Programs</b>	<b>Requirements for Progression</b>	<b>Progress To</b>
First Year Apprentice	25% of Course Credit Hours, <b>Plus</b> relevant work experience totaling 1800 hours	Second Year
Second Year Apprentice	50% of Course Credit Hours, <b>Plus</b> relevant work experience totaling 3600 hours	Third Year
Third Year Apprentice	75% of Course Credit Hours, <b>Plus</b> relevant work experience totaling 5400 hours	Fourth Year
Fourth Year Apprentice	100% of Course Credit Hours, <b>Plus</b> completion and sign-off of workplace skills required for certification totaling 7200 hours	Write Certification Examination
<b>5400/4800 Hour Programs</b>		
First Year Apprentice	33% of Course Credit Hours, <b>Plus</b> relevant work experience totaling 1800/1600 hours	Second Year
Second Year Apprentice	66% of Course Credit Hours, <b>Plus</b> relevant work experience totaling 3600/3200 hours	Third Year
Third Year Apprentice	100% of Course Credit Hours, <b>Plus</b> completion and sign-off of workplace skills required for certification totaling 5400/4800 hours	Write Certification Examination

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 which shall not be less than:

<b>Program Duration</b>	<b>Wage Rates</b>		<b>Comments</b>
<b>7200 Hours</b>	1 <sup>st</sup> Year	55%	These wage rates are percentages of the prevailing journey person'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.
	2 <sup>nd</sup> Year	65%	
	3 <sup>rd</sup> Year	75%	
	4 <sup>th</sup> Year	90%	
<b>5400 Hours and 4800 Hours</b>	1 <sup>st</sup> Year	55%	
	2 <sup>nd</sup> Year	70%	
	3 <sup>rd</sup> Year	85%	
4000 (Hairstylist) - 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 Board.

## 7.0 PERIODIC EXAMINATIONS

7.1 Every apprentice shall submit to such occupational tests and examinations as the Board 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 Board may shorten the term of apprenticeship and advance the date of completion accordingly.

## 8.0 GRANTING OF CERTIFICATES OF APPRENTICESHIP

Upon the successful completion of apprenticeship, the Board 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 normally shall not exceed one apprentice to every one journeyperson employed. Exceptions for specific occupations may occur with the approval of the Provincial Apprenticeship Board.

## 12.0 RELATIONSHIP OF THE PLAN OF TRAINING 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 Provincial Apprenticeship Board.

## 14.0 EMPLOYMENT, RE-EMPLOYMENT AND TRAINING REQUIREMENTS

14.1 The plan of training requires Apprentices to attend regularly their place of employment.

14.2 The plan of training requires Apprentices to regularly attend training programs for that occupation as prescribed by The Provincial Apprenticeship Board.

14.3 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 opportunity to be re-employed before another is hired.

14.4 The employer will permit each apprentice to attend regularly training programs as prescribed by the Provincial Apprenticeship Board.

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.



REQUIREMENTS FOR RED SEAL CERTIFICATION  
IN THE MOBILE CRANE OPERATOR OCCUPATION

1. Evidence that the required work experiences outlined in this plan of training has been obtained. This evidence must be in a format that clearly outlines the experiences and a signature (s) of an appropriate person(s) attesting that these experiences have been obtained to the level required.
2. Normally, have a combination of training from an accredited training program and suitable work experience totalling 5400 hours

Or

Have a total of 7200 hours of suitable work experience.

3. Completion of a National Red Seal examination to be set at a place and time determined by the Industrial Training Division of the Department of Education.
4. Pay the appropriate examination fee.

## ROLES AND RESPONSIBILITIES OF STAKEHOLDERS IN THE APPRENTICESHIP PROCESS

Apprenticeship process involves a number of stakeholders playing significant roles in the training of apprentices. This section captures, in a broad sense, these roles and the responsibilities that result from them.

### **Apprentices**

- ▶ to complete all required technical training courses as approved by the Provincial Apprenticeship Board.
- ▶ to find appropriate employment
- ▶ to complete all required work experiences in combination with the required hours.
- ▶ to ensure that the work experiences are well documented
- ▶ to approach apprenticeship training with an attitude and commitment that fosters the qualities necessary for a successful career as a qualified journeyman.
- ▶ to obtain the required hand tools as specified by the Board for each period of training of the apprenticeship program.
- ▶ to provide feedback to Training Institutions, the Industrial Training Division and Employers in an effort to establish a process of continuous quality improvement.

### **Employers**

- ▶ to provide high quality work experiences in an environment that is conducive to learning.
- ▶ to remunerate apprentices as set out in the Plan of Training or Collective Agreements.
- ▶ to provide feedback to Training Institutions, Industrial Training Division and Apprentices in an effort to establish a process of continuous quality improvement.
- ▶ where appropriate, to release apprentices for the purpose of returning to a training institution to complete the necessary technical courses.
- ▶ to ensure that work experiences of the apprentices are documented.

### **Training Institutions**

- ▶ to provide a high quality learning environment.
- ▶ to provide the necessary student support services that will enhance an apprentices ability to be successful.
- ▶ to participate with other stakeholders in the continual updating of programs.

### **Industrial Training Division**

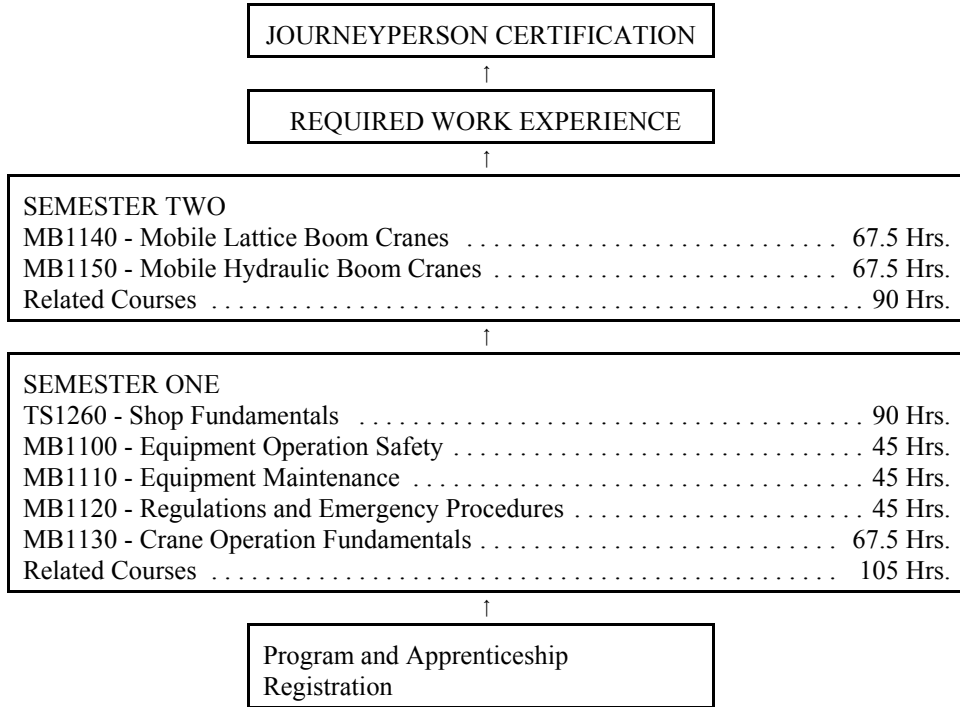
- ▶ to establish and maintain provincial program advisory committees under the direction of the Provincial Apprenticeship Board.
- ▶ to promote apprenticeship training as a viable career option to prospective apprentices and other appropriate persons involved such as career guidance counsellor, teachers, parents, etc.
- ▶ to establish and maintain a protocol with apprentices, training institutions, employers and other appropriate stakeholders to ensure the quality of apprenticeship training programs.
- ▶ to ensure that all apprentices are appropriately registered and records are maintained as required.
- ▶ to schedule all necessary technical training periods for apprentices to complete requirements for certification.
- ▶ to administer provincial/interprovincial examinations.

### **Provincial Apprenticeship Board**

- ▶ to set policies to ensure that the provisions of the Apprenticeship Training Act are implemented.
- ▶ to ensure that advisory and examination committees are established and maintained.
- ▶ to accredit institutions to deliver apprenticeship training programs.
- ▶ to designate occupations for apprenticeship training and / or certification.

## TECHNICAL COURSE OUTLINES

## SUGGESTED COURSE LAYOUT FOR THE MOBILE CRANE OPERATOR OCCUPATION



**COURSE OUTLINE - TS1260**

**Name and Number:** Shop Fundamentals TS1260

**Descriptive Title:** Shop Fundamentals

**Description:**

This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities.. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

**Prerequisites:** None

**Co-requisites:** None

**Credit Value:** 4

**Course Aims:**

1. To gain an appreciation of the need for safety regulations in the operation and maintenance of shop tools, equipment and facilities
2. To be able to administer first aid and CPR
3. To develop an awareness of hazardous workplace materials

**Course Objectives (Knowledge):**

1. List general workplace safety regulations
2. List fire safety regulations
3. Describe the operation and uses of different types of fire extinguishers
4. Explain the safety standards prescribed by the Occupational Health and Safety Regulations
5. Describe the use of the different types of precision measuring tools
6. Describe safety requirements for using hand tools and fasteners

7. Describe the different types of fasteners
8. Explain oxidation, corrosion, tensile strength and shear strength
9. Describe types of hydraulic and pneumatic lines and fittings and explain their applications
10. Describe types of tubing and flaring tools and explain the application of each
11. Explain the purpose of threading taps and dies
12. Describe the types of fastener tools
13. Describe types and explain the uses of pullers, drivers and presses
14. Describe the different types of power tools
15. Describe the different types of hydraulic tools
16. Describe safety requirements for using power tools
17. Describe drill sizes and speed requirements
18. Explain the purpose of cutting power tools
19. Describe types and explain applications of:
  - i. portable and stationary grinders
  - ii. grinding wheels
  - iii. grinding discs
  - iv. grinder dressers
  - v. rotary wire brushes
20. Describe types of compressors and components
21. Describe the pliers (all types), screwdrivers (all types), wrenches (all types), clamps (all types) and vices (all types) used for fitting and assembling as per assigned information to within specifications required.
22. Describe as per the assigned information, rivets, keys, nuts, screws, pins, splines, studs, bolts, snaprings, bonds (thread locking compounds), washers, lock wires and self-locking nuts

**Major Tasks / Subtasks (Skills):**

1. Practice safety
  - a. Interpret occupational safety code
  - b. Apply safe work habits at all times
  - c. Use and maintain personal safety equipment
  - d. Implement exhaust control procedures
  - e. Use fire fighting equipment
  - f. Respect noise level regulations
  - g. Reduce factors that contribute to spontaneous combustion
  - h. Identify potential hazards to personal safety
  - i. Check for unsafe conditions
  - j. Report accident

2. Complete a St. John's Ambulance Standard First Aid Course
3. Complete a Workplace Hazardous Materials Information Systems Course
4. Use and maintain gripping and turning tools, measuring devices and levels
  - a. Use measuring tools (measuring tapes, rules, scale rules, calipers, gauges, straight edges, plumb bobs, squares, and calculators) and levels
  - b. Use pliers, screwdrivers, wrenches, hammers and mallets and other gripping and turning tools
  - c. Use torque wrench
5. Use and maintain flaring tools
  - a. Single and double flare tubing
  - b. Bend tubing
  - c. Measure and cut tubing
  - d. Use compression fittings
  - e. Anneal tubing before flaring as may be necessary
  - f. Test and inspect flared fittings
6. Use and maintain cutting tools
  - a. Identify, maintain and use punches, chisels, files and saws
  - b. Sharpen chisels and twist drills and drill bits
  - c. Shape and sharpen a cold chisel
  - d. Maintain and store cutting tools
  - e. Cut bolts
  - f. Drill and ream holes
7. Use and maintain threading devices
  - a. Select and safely use proper tools for given job
  - b. Maintain threading tools
  - c. Make an internal thread
  - d. Make an external thread
  - e. Restore damaged thread
  - f. Remove broken screw
  - g. Use tap and drill chart
8. Install fasteners
  - a. Use and identify fasteners such as rivets, nails, wood screws, sheet metal screws, bolts, nuts, washers, masonry anchors and shields
  - b. Describe specific uses for each fastener
  - c. Recognize sizes of fasteners
  - d. Torque bolts



- e. Identify bolt grades
  - f. Identify miscellaneous anchoring devices
9. Safely and effectively use, maintain and store pullers, drivers and presses
10. Use power tools
- a. Operate portable power tools
  - b. Operate power cleaning equipment
  - c. Operate hydraulic punches, pullers, drivers and presses
11. Drill materials
- a. Safely and effectively operate power drilling equipment (hammer and portable drill)
  - b. Select and use cutting fluids
  - c. Identify and select clamping devices
  - d. Maintain drilling equipment (Pre-op maintenance)
12. Cut metals (power)
- a. Safely and effectively use power operated saws, friction cut-off equipment and shears
  - b. Maintain metal cutting power tools
  - c. Identify and use abrasives
13. Grind and finish metals
- a. Install grinding wheel disc and brush
  - b. Adjust tool rest
  - c. Dress grinding wheel
  - d. Safely and effectively operate stationary and portable grinders
  - e. Maintain equipment
14. Use and maintain compressed air system
- a. Demonstrate safety precautions when using and maintaining compressors
  - b. Identify components of air controller (transformer)
  - c. Use and maintain air controller (transformer)
  - d. Use and maintain air and fluid hoses
15. Use and maintain shop equipment
- a. jacks
  - b. shop cranes
  - c. chain hoists
  - d. steam cleaner
  - e. solvent cleaning tanks

**Evaluation:**

Written reports and/or tests.  
Competence in simulated work.

**Development History:**

Date Developed: December 1993

**COURSE OUTLINE - MB1100**

**Name and Number:** Heavy Equipment Operation 1100

**Descriptive Title:** 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).

**Prerequisites:** TS1100

**Co-requisites:** None

**Credit Value:** 2

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for the safe operation of heavy equipment with respect to various codes and regulations
2. To practice safety in potentially harmful situations
3. 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 2 steps to follow if you either

- a. discover a warning tag or symbol, or
- b. 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 at least 3 common physiological (body) states which could lead to a dangerous operating situation
11. List at least 3 common psychological (mental) states which could lead to a dangerous operating situation
12. List at least 5 common mechanical failures which could lead to a dangerous operating situation
13. List at least 8 common meteorological (weather) and terrestrial (land) conditions which could lead to a dangerous operating situation
14. List at least 10 operational malpractice and poor habits which could lead to a dangerous operating situation
15. List safety procedures to use when running an engine in an enclosed area
16. List at least 4 toxic fumes that are associated with engine exhaust gases
17. Identify hoses and attachments needed to connect the engine exhaust pipe to a central ventilation system in a maintenance shop
18. List at least one device used to control exhaust fumes from engines when working in an underground work site
19. Outline, in accordance with the Dept. of Forest Resources and Lands, the regulations governing exhaust flame or spark arrestor while operating machinery in the forest
20. List at least 6 kinds of overhead/underground services that may be found on federal, provincial, municipal, and private lands
21. List at least 6 questions or issues the operator should have knowledge of before actual digging begins
22. State, using 120 volt current, how many milli-amps (approximately) does it take to cause a person's heart to stop pumping blood
23. State the normal working clearance in meters when working around any electric powered line
24. State 5 emergency procedures for an emergency situation
25. List the four types of fire extinguisher and the specific applications of each
26. Draw or explain the symbol used for each type of fire extinguisher
27. State the usual operation of each type of fire extinguisher
28. List the checks for each type of fire extinguisher that determine if authorized servicing or maintenance is required

29. Describe safety procedures for using power wood saws
30. Explain or demonstrate how to adjust and fasten properly the operator's harness and/or seat belt
31. State, regardless of appearance, when a seat belt and/or restraining harness should be replaced
32. State the regulation(s) regarding the usage of a harness and/or seat belt
33. Explain the effects of speed and weight on stopping distance
34. Show in a simple drawing how force multipliers are used in an air brake system
35. Define the following terms: Reaction Time, Brake Lag, Braking Distance, Stopping Distance
36. List the major components of an air brake system and briefly describe the function of each component
37. Explain with the use of a Schematic diagram how the air flows in an air brake system on a combination vehicle when the brakes are applied by hand or foot valve

**Major Tasks / Subtasks (Skills):**

1. Wear protective clothing and equipment
  - a. Identify potential hazards to personal safety
  - b. Keep work area clean and tidy
  - c. Demonstrate personal safety
2. Interpret warning signs, symbols and danger tags
  - a. Locate and identify, using operator's manual or the actual machine, any warning tag or warning symbol
  - b. Correctly match symbols to corresponding meanings
3. Mount and dismount equipment properly
  - a. Identify, from diagrams or from the actual machine, all safety grab-irons, handrails, steps, and foot-pegs used when mounting or dismounting equipment
  - b. Mount/dismount equipment properly at all times
4. Verify safe clearance in work areas
5. Recognize dangerous operating actions
6. Recognize dangerous operating actions for enclosed areas
7. Use fire prevention equipment
  - a. Identify the components of the fire triangle
  - b. Select and use proper fire extinguisher for simulated fire conditions

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*Mobile Crane Operator*

8. Use power wood saws safely
  - a. Use a chain saw
  - b. Use a portable circular saw
9. Use seat belts and safety harness
10. Qualify for air brake endorsement
  - a. Service and replace air filters
  - b. Perform Air Brake maintenance and adjustments
  - c. Inspect any given air brake vehicle and determine whether it is roadworthy or not
  - d. Diagnose running faults and recommend corrective action on a given vehicle
11. Qualify for professional drivers improvement course certificate
  - a. Participate in a Professional Driver's course
  - b. Obtain a valid Professional Driver's Improvement Course Certificate
12. Qualify for a Transportation of Dangerous Goods certificate
13. Hold valid flagpersons certificate
14. Complete a St. John's Ambulance Standard First Aid Course

**Evaluation:**

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**COURSE OUTLINE MB1110**

**Name and Number:** Heavy Equipment Operation 1110

**Descriptive Title:** 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.

**Prerequisites:** TS1100

**Co-requisites:** None

**Credit Value:** 2

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for maintaining heavy equipment with respect to various codes and regulations
2. To practice safety in potentially harmful situations
3. 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. State the function of each
11. List four additives found in engine oil
12. State the functions of each
13. List two functions and two additives of gear oils
14. State the functions of each
15. Identify the components of the engines lubrication system from a diagram
16. State the function of each component
17. List the American Petroleum Institute (A.P.I.) Engine Service classification for "S" Service Station and "C" Commercial
18. List five Viscosity numbers that have been designated by the Society of Automobile Engineers for engine oils
19. State the functions of four of the components
20. List two types of fuel systems used on engines
21. List two grades of commercial diesel fuel used
22. List the fuel combustion cycle
23. List correct procedures for storing fuel
24. Explain the purpose of the cooling system in an engine
25. State the functions of each component
26. List at least 12 basic hand tools and 3 power tools used in the HEO occupation
27. State the basic metallurgical composition of hand tools
28. State rules for safe use of power tools
29. State rules for safe use of hand tools
30. List procedures for the care, cleaning and storage of hand and power tools
31. Describe safety procedures for using hand tools
32. Describe safety procedures for metal-cutting power tools

**Major Tasks / Subtasks (Skills):**

1. Occupational orientation and related tasks
  - a. Locate the various components of the lubrication system and list the servicing period for each
  - b. Locate and state the purpose of the service meter
  - c. Identify the various grades of oils to use under various temperature conditions
  - d. Locate the serial number of the machine
  - e. State the slack allowed in belts and tracks and the procedure to follow when



- adjusting
  - f. State the procedure to follow when starting-up, operating and shutting down the machine under various weather conditions
  - g. 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
- a. Identify the appropriate lubrication/servicing/maintenance manuals corresponding to the machine you are now operating
  - b. 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
- a. Complete a sample Work Record Sheet (or Time Card) or a Log Book corresponding to the machines the student selects
4. Order parts
- a. From an actual machine or given resources and upon completion of this module, the student will be able to:
    - i. Locate the machine serial number or Vehicle Identification Number (V.I.N.) embossed plate corresponding to the machines you are now operating
    - ii. Match the appropriate parts book to the correct make, model and serial number of the machine you are now operating
    - iii. Locate the engine specifications plate and serial number
5. Grease, lubricate and refuel equipment
- a. Select correct greases for equipment with the aid of a Service Manual
  - b. Load a grease gun
  - c. Grease the machine
  - d. Refuel the machine
6. Service and charge storage battery
- a. Select from a list of safety rules, those pertaining to care and maintenance of batteries
  - b. State general rules of the need for charging a battery
  - c. Arrange in order procedures for operating a battery charger
  - d. Clean and service a battery
  - e. Measure battery electrolyte with a hydrometer
  - f. Connect a charger to battery terminals

7. Change lubricating oils and filters
  - a. Change engine oil and filter
  - b. Change transmission filter
  
8. Service fuel systems
  - a. Identify the components of a fuel system using a diagram
  - b. Prime a fuel system
  - c. Service a fuel system
    - i. Drain water from tank and sediment bowl
    - ii. Change fuel filters
    - iii. Change a water separator
  
9. Service cooling systems
  - a. Identify the components of the cooling system from a drawing
  
  - b. Select, from a list, the requirements of a good coolant
  - c. Identify the components of the cooling system on the machine he/she operates
  - d. Test anti-freeze solution
  - e. Service cooling system by checking for plugged radiator core or bent fan blades
  
10. Use power and hand tools
  
11. Match tool description and terminology to correct hand and power tools
  
12. Use wrenches, pliers, screwdrivers, vices and clamps, hammers, chisels and punches safely
  
13. Use metal-cutting power tools safely
  - a. Use metal-cutting power tools
  - b. Select metal-cutting blades
  - c. Use portable power drills
  - d. Use drill press
  - e. Use grinders
  - f. Select grinding disks and wheels for portable angle grinders
  
14. Select and use fasteners
  - a. Identify and describe types of fasteners
  - b. Identify sizes of fasteners
  - c. Use fasteners
  - d. Torque bolts

**Evaluation:**

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*Mobile Crane Operator*

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**COURSE OUTLINE MB1120**

**Name and Number:** Heavy Equipment Operation 1120

**Descriptive Title:** 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).

**Prerequisites:** TS1100

**Co-requisites:** None

**Credit Value:** 2

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for implementing various codes and regulations
2. To practice safety in potentially harmful situations
3. 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 conditions for the Registration and licensing of vehicles
3. Outline the conditions for licensing of drivers
4. State the provincial regulations concerning:
  - i. parking
  - ii. following
  - iii. passing and being passed
  - iv. emergency vehicles
  - v. right-of-way at intersections
  - vi. signalling

- vii. speed limits
- viii. railway crossings
- ix. warning devices
- x. school buses
- 5. Identify all hand signals pertaining to boom operated equipment.
  - i. Rigger Handbook of Calgary
  - ii. OET Pocket Card
- 6. Identify all signals pertaining to Heavy Equipment Operations from the given resource material
- 7. Match up sentence descriptions to pictorial descriptions of hand signals  
State the conditions for which a special permit is required to operate on a highway
- 9. Outline the conditions for operating vehicles in Newfoundland while registered under the laws of another province
- 10. Outline the circumstances under which a bond may be required before a special permit may be issued
- 11. State the condition under which the vehicle's regulations are not applicable
- 12. Given a diagram of different vehicle configurations, identify the maximum permitted mass and maximum wheel or axle mass
- 13. State the conditions under which a dealer may issue a temporary license
- 14. List the duties of a person to whom a temporary license has been issued regarding the license
- 15. 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
- 16. State the powers of inspectors regarding vehicle inspections
- 17. State the information required in an application for a Motor Carrier Certificate
- 18. List the eight classifications of freight specialty services and give a brief description of each
- 19. Outline the information required to prepare a Bill of Lading
- 20. List the goods for which a carrier shall not be required to issue a Bill of Lading
- 21. Outline the conditions for which a motor carrier shall not be held liable
- 22. Define the following terms (a) interline (b) bill of lading (c) consignee (d) shipper and (e) consignor
- 23. Describe jackknifing causes and preventions
- 24. Describe hydroplaning causes and preventions
- 25. Explain driving procedures which conserve fuel
- 26. Describe freight handling principles
- 27. Define commonly used insurance terms
- 28. Explain the following types of insurance coverage:
  - a. Collision

- b. Comprehensive
  - c. Accident Benefits
29. List four reasons why the cost of insurance premiums vary
  30. Outline the duties of motor carriers concerning the insurance of goods transported
  31. 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
  32. Identify and state the function of the various knobs, buttons, adjustments and dials as found on a 2-way radio
  33. State any expressions or terminology used while transmitting on a 2-way radio
  34. State uses of 2-way radios in industry
  35. Correctly list and explain the operational functions of shut-down controls, and safety controls used during emergency engine stops
  36. List hazardous conditions that may cause an emergency whenever a crane is operated in various work sites
  37. State preventative measures that help off-set hazardous conditions whenever a crane is operated in various work sites
  38. Select from a list regulations pertaining to operating and travelling machines on public roads using the Occupational Health and Safety Regulations
  39. Define his/her responsibility to prevent accidents, and the need for safety when travelling and operating machines in this situation
  40. Identify manufacturer's recommendations or special precautions regarding travelling of vehicles to and from job sites, corresponding to the machines the student selects
  41. Determine the correct tire inflation pressure(s) for operating and travelling equipment corresponding to the machines the student selects
  42. Determine the maximum allowable ground speed while travelling, corresponding to the machines that student selects
  43. State the maximum allowable time and/or distance to travel a machine at maximum ground speed, before stopping to allow tires and components to cool
  44. Identify what warning sign(s) if any, must be attached to machines while travelling to and from job sites
  45. State roll-over protection regulations
  46. List what types of mobile machinery must be fitted with a R.O.P.S. canopy after January 1980
  47. State the information that must be stamped on a R.O.P.S. canopy
  48. State the regulation concerning the compulsory placement of seat belts and restraining harnesses in a R.O.P.S. cab
  49. State if it is compulsory to wear a seat belt or harness on every work site or operation
  50. Describe the use of straps, slings and tow cables
  51. Describe the safety clothing required for handling wire ropes and link-chains
  52. State situations when using wire rope which can affect its performance, service life and safety

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*Mobile Crane Operator*

53. State situations when using link-chain which can affect its performance, service life and safety
54. Describe the different types of load builders used to lash equipment and materials on floats and lo-boys for transport
55. List other hardware necessary for lashing down equipment and materials on floats and lo-boys in preparation for transport
56. List the factors for preventing excessive wear for possible damage when moving disabled equipment
57. Select from a list guidelines for safe towing of disabled machines
58. List safety factors in selection of tow bars, cables and tow pins
59. Define terms associated with loading, lashing and unloading equipment
60. State safety procedures for loading and moving equipment
61. State the reasons for floating equipment and the advantages even for short distances
62. Explain the proper positioning on the float for loading and unloading each type of equipment
63. What is the legal height and width of machines that can be transported and how are special highway permits for restricted loads obtained

**Major Tasks / Subtasks (Skills):**

1. Interpret Highway Traffic Act and National Safety Codes
  - a. Indicate (on a given diagram) the vehicles having the "Right-of-Way"
  - b. Complete (without the help of any reference) an exam on the "Rules of the Road" and score a minimum of 84%
2. Identify and interpret hand signals pertaining to boom crane operation
  - a. Identify audible signals for travelling boom and mobile cranes
  - b. Demonstrate ability to receive and respond to signals in an actual Heavy Equipment Operation
3. Inspect a given vehicle and determine if the vehicle and its equipment conforms to the vehicle's regulations
4. Given an appropriate vehicle and checklist inspect the vehicle and indicate on checklist all items not meeting the licensing and equipment standards
5. Interpret motor carrier act
6. Report accidents
7. Maintain motor vehicle operators daily log

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*Mobile Crane Operator*

8. Use tachograph
9. Use road maps
10. Drive on a super-highway
11. Demonstrate the ability to use a 2-way radio properly in an actual transmitting situation
12. Interpret load security regulations
13. Perform emergency stopping procedures
  - a. Locate correctly all emergency engine stops, shut-down controls, and safety controls on the machines selected
  - b. Correctly complete an accident report for any piece of heavy equipment machinery
  - c. Demonstrate emergency stopping procedures with the machines
14. Travel machine on public highways
15. Demonstrate the ability to lash down equipment and materials on floats and lo-boys for transport
16. Travel equipment to and from job sites
  - a. Check and inflate tires to correct pressure
  - b. Indicate to instructor where slow moving vehicle signs should be located on machine
  - c. Obey all traffic regulations
  - d. Travel machine on a public highway (this applies to machine in the band allowed by law to travel on public road systems)
17. Plan movement of disabled equipment
  - a. Select correct tow cables, tow pins to be used
  - b. Position dozer, select gear range, and tow a machine out of a bog
18. Load and unload equipment
  - a. Demonstrate the proper use of binders and chains used to secure the load
  - b. Load and unload the machine from rear to float

**Evaluation:**

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.



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*Mobile Crane Operator*

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**COURSE OUTLINE MB1130**

**Name and Number:** Heavy Equipment Operation 1130

**Descriptive Title:** Crane Operation Fundamentals

**Description:**

This course in hoisting equipment requires the use of a crane, equipment, a suitable environment, a load and a load chart. It involves inspecting the machine, moving the crane, considering the variables, making calculations, setting-up, rigging the load, confirming the LMI, signalling and moving the load. It includes information on load moment indicators, operations, techniques, and safety requirements.

**Prerequisites:** TS1100, MB1100, MB1110, MB1120 (Tandem Axle Licence)

**Co-requisites:** None

**Credit Value:** 3

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for operating cranes with respect to various codes and regulations
2. To practice safety in potentially harmful situations
3. To develop an appreciation for conservation and environmental issues

**Course Objectives (Knowledge):**

1. Describe the mobile crane operation occupation in terms of
  - a. the work of crane operator
  - b. the crane operator's working conditions
  - c. the crane operator training program
  - d. the responsibilities of the various parties involved with crane operation
2. Describe mobile cranes
3. Identify types and uses of mobile cranes
4. Describe the characteristics of hydraulic boom and lattice boom cranes
5. Describe the construction of wire rope
  - a. Describe basic components of wire rope

- b. Describe types and grades of wire rope
- c. Describe finished wire rope
- d. Describe manufactured lubrication methods
- e. Describe methods for measuring wire rope
- f. Describe the effects of wire rope stretching
- g. Describe wire rope fittings and connections
6. Describe principles of crane operation
  - a. Describe leverage and stability
  - b. Perform leverage calculations
  - c. Describe changes in crane leverage and capacity during rotation of upperworks
  - d. Describe forward and backward stability factors
  - e. Describe structural failure
  - f. Describe wire rope safety factors
7. Describe quadrants of operation
  - a. Define quadrants and sweep area
  - b. Explain division of sweep area into quadrants
  - c. Describe quadrants cranes
8. Identify the function of the Worker's Compensation Board and its regulations relating to the occupation
9. Identify relevant sections of the Mines Act and the Commercial Transport Act
10. Identify relevant sections of the Motor Vehicle Act
11. Identify municipal considerations for transporting and operating cranes
12. Outline the regulations governing the use of exhaust flame or spark arrestor while operating machinery in the forest
13. Describe regulations pertaining to operating and travelling machines on public roads using the Occupational Health and Safety Regulations
14. Define the operator's responsibility to prevent accidents, and the need for Safety when travelling and operating machines in this situation
15. Identify manufacturer's recommendations or special precautions regarding travelling of vehicles to and from job sites, corresponding to the machines selected
16. Determine the correct tire inflation pressure(s) for operating and travelling equipment corresponding to the machines selected
17. Determine the maximum allowable ground speed while travelling, corresponding to the machines that are selected
18. State the maximum allowable time and/or distance to travel a machine at maximum ground speed, before stopping to allow tires and components to cool
19. Identify what warning sign(s) if any, must be attached to machines while travelling to and from job sites
20. Describe the safety procedures to be followed when assembling a portable oxy-acetylene outfit
21. Identify the gases used in oxy-acetylene cutting and welding
22. Identify oxy-acetylene cylinders, valves, and safety devices, and state the safe procedures

- to be followed when handling, storing, and transporting same
23. Identify oxygen and acetylene regulators, and state the safe procedures to be followed when handling and storing same
  24. Identify hoses and oxy-acetylene fittings, and state the safe procedures to be followed when handling and storing same
  25. Identify a torch assembly, torch line explosion, and reverse flow check valves and state the safe procedures to be followed when handling and storing same
  26. Identify and describe slings, rigging hardware applications, and safe working loads
  27. Describe tackle arrangements
  28. Identify the different sling configurations
  29. Identify disadvantages of using fibre, synthetic, and chain slings
  30. Describe the selection and functions of wire ropes
  31. Describe the proper handling procedures in receiving, unloading, and storing wire rope
  32. Describe factors affecting wire rope maintenance, replacement, and rigging components
  33. Describe responsibilities of riggers
  34. Describe procedures and precautions for rigging operation
  35. Describe the five basic rules for rigging signals
  36. Identify load charts for different cranes
  37. Describe configuration of crane bases and booms
  38. Describe quadrants of operation and their effects on load charts
  39. Describe boom lengths and their effects on load charts
  40. Define boom angle, boom length, and load radius
  41. Describe effects on values of boom angle, boom length, and load radius for chart listings
  42. Describe differences between gross capacity vs. net capacity
  43. Describe how to use range diagrams
  44. Describe main boom gross capacity - lattice booms
  45. Describe main boom gross capacity - full power telescopic booms
  46. Describe main boom gross capacity - pinned telescopic booms
  47. Describe main boom capacities with jibs and/or boom extension installed for all types of cranes
  48. Describe jib and boom extension types and lengths
  49. Define jib offset, jib angle to boom, and jib angle to ground
  50. Describe the three methods of determining jib capacities of lattice booms
  51. Describe full power telescopic booms
  52. Describe pinned telescopic booms
  53. Describe factors that reduce capacity
    - a. Describe the effects of increased load radius
    - b. Describe the effects of rapid swing rate
    - c. Describe the effects of impact loading and rapid acceleration or deceleration of load
    - d. Describe duty cycle operations
    - e. Describe the effects of high wind speeds

54. Describe conditions which prohibit crane operation
  - a. Describe poor machine conditions
  - b. Describe machine configuration not to specification
  - c. Describe eccentric reeving
  - d. Describe improper use of outriggers
  - e. Describe soft footing and resulting factors
  - f. Describe effect of crane not level
55. Describe ground conditions and blocking procedures
56. Describe crane levelling procedures
57. Describe clearances required for transporting and operating cranes
58. Describe how weather and atmospheric conditions can restrict crane operation
59. Discuss safety considerations for short-term and long-term shutdowns
60. Describe structural failure
61. Describe effects of overloading

**Major Tasks / Subtasks (Skills):**

1. Interpret signals
  - a. Identify all hand signals used by bandsmen in crane operations
  - b. Identify other construction hand signals which may cause confusion for crane operation
  - c. Match sentence descriptions to pictorial descriptions of hand signals
  - d. Identify audible signals for travelling boom and mobile cranes
  - e. Receive and respond to signals in an actual crane operation
2. Complete Power Line Hazards Course
3. Travel machinery on public highway - mobile crane
  - a. Hold Class 3 Endorsement - Mobile Crane
  - b. Move crane on public highway
4. Set up and use oxy-acetylene cutting equipment
5. Select and assemble slings and bridles
  - a. Reeve blocks
  - b. Calculate sling angles and safe working loads
  - c. Select and assemble wire rope slings, fittings, and connectors
6. Inspect and maintain rigging components
  - a. Lubricate wire rope
  - b. Inspect wire rope, running line, pendants, wire rope connections, and components
  - c. Properly install wire rope and standing lines

7. Perform rigging operations
  - a. Determine the weight of the loads
  - b. Determine the center of gravity of a load
  - c. Rig a load
  - d. Check a load for proper rigging
8. Determine conditions of a load chart
  - a. Calculate parts of line, weight of line, and sizing the hook block
9. Determine main load capacities
  - a. List capacity deductions
  - b. Calculate net capacities
10. Determine main boom capacities with jibs or boom extensions installed
  - a. Determine the effective weight of jibs and boom extensions
  - b. List capacity deductions
  - c. Calculate net capacities
11. Determine jib and boom extension capacities for lattice booms
  - a. Determine effective weight of jib
  - b. List capacity deductions
  - c. Calculate net jib capacities using each method
12. Determine jib and boom extension capacities for full telescopic booms
  - a. Calculate boom extension capacities
  - b. Calculate jib capacities - using one load chart
  - c. Calculate jib capacities - using two load charts
  - d. Calculate boom extension and jib combination capacities - using one load chart
  - e. Calculate boom extension and jib combination capacities - using two load charts
13. Determine jib and boom extension capacities for pinned telescopic booms
  - a. Calculate boom extension capacities
  - b. Calculate jib capacities - using one load chart
  - c. Calculate jib capacities - using two load charts
  - d. Calculate boom extension and jib combination capacities - using one load chart
  - e. Calculate boom extension and jib combination capacities - using two load charts
14. Plan a lift
  - a. Identify and evaluate work to be performed
  - b. Describe considerations influencing lifting procedures
  - c. Analyze factors influencing equipment selection

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17. Determine set-up safety consideration
  - a. Determine crane working position

**Evaluation:**

Written reports and/or tests.  
Competence in simulated work and/or experiential endorsements.

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**COURSE OUTLINE MB1140**

**Name and Number:** Heavy Equipment Operation 1140

**Descriptive Title:** Mobile Lattice Boom Cranes

**Description:**

This course in hoisting equipment requires the use of mobile lattice boom cranes and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, assembly, setting-up, planning strategies, hoisting and dismantling. It includes information on operations, techniques and attachments.

**Prerequisites:** MB1130

**Co-requisites:** None

**Credit Value:** 3

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for the operation of mobile lattice boom cranes with respect to various codes and regulations
2. To practice safety in potentially harmful situations
3. To develop an appreciation for conservation and environmental issues

**Course Objectives (Knowledge):**

1. Describe procedures for starting, moving, and stopping a crane carrier
2. Describe inspection procedures for a carrier
3. Describe and identify crane upperworks components
4. Describe and identify upperworks mounting and swing systems
5. Describe and identify upperworks power train
6. Describe inspection procedures of the upperworks
7. Describe start-up, cycle, and shut-down procedures
8. Describe crane components
9. Describe boom and jib configurations
10. Describe reeving patterns
11. Describe the precautions when moving a crane with boom erected
12. Describe final operational considerations



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*Mobile Crane Operator*

13. Describe placement and hoisting procedures
14. Describe procedures for dismantling a crane for transport

Crawler Crane

15. Describe information found in the operator's manual
16. Describe superstructure swing and travel systems maintenance procedures
17. Describe hoist group clutch and brake maintenance
18. Describe start-up, cycle, move, shutdown, and inspection procedures
19. Describe information found in the operator's manual
20. Describe crane components
21. Describe boom and jib configurations
22. Describe reeving patterns
23. Describe the procedures for assembling a crane
24. Describe the precautions when moving a crane with boom erected
25. Describe final operational considerations
26. Describe placement and hoisting procedures
27. Describe hoisting procedures for pick and carry
28. Describe procedures for dismantling a crane for transport

**Major Tasks / Subtasks (Skills):**

1. Identify major parts and components
  - a. Identify frame components, gauges, controls, and systems
  - b. Identify power train systems and components
  - c. Identify wheels and tires
2. Inspect, start and shut-down crane carrier
  - a. Start up and shut down crane carrier
  - b. Inspect a crane carrier
3. Inspect, start and shut-down crane upper works
  - a. Start up and shut down crane upper-works
  - b. Inspect crane upper-works
4. Assemble a lattice boom crane
  - a. Follow information found in the operator's manual
  - b. Assemble a lattice boom crane
  - c. Perform pre-operational inspection after crane assembly
5. Manoeuvre and set-up crane on site
  - a. Interpret manufacturer's specifications

- b. Move crane with an erected boom to working position
6. Perform hoisting operations
7. Dismantle a mobile lattice boom crane for transport
8. Identify the major parts and components of a lattice boom crawler crane
  - a. Identify track frame and car body components
  - b. Identify travel systems and components
  - c. Identify crane upper-works components
  - d. Identify upper-works mounting and swing systems
  - e. Identify upper-works power train
9. Perform routine crane maintenance and adjustments on a lattice boom crawler crane
10. Inspect, start, move, cycle and shut-down a crawler crane
  - a. Inspect a crawler crane
  - b. Start up and shut down crane
  - c. Move and cycle a crane
11. Assemble and erect crane to working position
  - a. Assemble a lattice boom crawler crane
  - b. Perform pre-operational inspection after crane assembly
12. Manoeuvre and set up crane on site
  - a. Interpret manufacturer's specifications
  - b. Move crane with an erected boom to working position
13. Perform hoisting operations
14. Dismantle and prepare a crane for transport

**Evaluation:**

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**COURSE OUTLINE - MB1150**

**Name and Number:** Heavy Equipment Operation 1150

**Descriptive Title:** Mobile Hydraulic Boom Cranes

**Description:**

This course in hoisting equipment requires the use of an hydraulic boom crane and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, assembly, setting-up, planning strategies, hoisting and dismantling mobile hydraulic boom cranes. It includes information on operations, techniques and attachments.

**Prerequisites:** MB1130

**Co-requisites:** None

**Credit Value:** 3

**Text book(s) / Software used by Lead Institution:**

**Course Aims:**

1. To develop the skills and knowledge required for operating mobile lattice boom cranes with respect to various codes and regulations
2. To practice safety in potentially harmful situations
3. To develop an appreciation for conservation and environmental issues

**Course Objectives (Knowledge):**

1. Describe procedures for starting, moving, and stopping a crane carrier
2. Describe inspection procedures for a carrier
3. Describe and identify crane upperworks components
4. Describe and identify upperworks mounting and swing systems
5. Describe and identify upperworks power train
6. Describe inspection procedures of the upperworks
7. Describe start-up, cycle, and shut-down procedures
8. Describe procedures for assembling and erecting the crane to working position
9. Describe final operational considerations
10. Describe hoisting procedures for a mobile hydraulic boom crane
11. Describe procedures for preparing a mobile hydraulic boom crane for transport

Rough Terrain

12. Describe procedures for starting, moving, and stopping a crane carrier
13. Describe inspection procedures for a carrier
14. Describe and identify crane upperworks components
15. Describe and identify upperworks mounting and swing systems
16. Describe and identify upperworks power train
17. Describe inspection procedures of the upperworks
18. Describe start-up, cycle, and shut-down procedures
19. Describe procedures for assembling and erecting the crane to working position
20. Describe final operational considerations
21. Describe hoisting procedures for a mobile rough terrain hydraulic boom crane
22. Describe hoisting procedures for pick and carry
23. Describe procedures for preparing a mobile rough terrain hydraulic boom crane for transport

**Major Tasks / Subtasks (Skills):**

1. Identify major parts and components
  - a. Identify frame components, gauges, controls, and systems
  - b. Identify power train systems and components
  - c. Identify wheels and tires
2. Inspect, start and shut-down carriers
  - a. Start up and shut down crane carrier
  - b. Inspect a crane carrier
3. Inspect, start and shut-down crane upper-works
  - a. Start up and shut down crane upper-works
  - b. Inspect crane upper-works
4. Assemble and erect a mobile hydraulic boom crane
  - a. Assemble a mobile hydraulic boom crane assembly
  - b. Perform pre-operational inspection after crane assembly
5. Perform hoisting operations
6. Dismantle a mobile hydraulic crane for transport
7. Identify major parts and components (rough terrain)
  - a. Identify frame components, gauges, controls, and systems
  - b. Identify power train systems and components

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*Mobile Crane Operator*

- c. Identify wheels and tires
- 8. Inspect, start and shut-down crane carrier (rough terrain)
  - a. Start up and shut down crane carrier
  - b. Inspect a crane carrier
- 9. Inspect, start and shut-down crane upper-works (rough terrain)
  - a. Start up and shut down crane upper-works
  - b. Inspect crane upper-works
- 10. Assemble and erect a mobile rough terrain hydraulic boom crane
  - a. Assemble a mobile rough terrain hydraulic boom crane
  - b. Perform pre-operational inspection after crane assembly
- 11. Perform hoisting operations (rough terrain)
- 12. Dismantle rough terrain crane for transport

**Evaluation:**

Written reports and/or tests.

Competence in simulated work and/or experiential endorsements.

**Lead Institution:**

**Development History:**

Date Developed: May 1994

**Instructor's Notes:**

**REQUIRED RELATED COURSES**

**COURSE NAME & NUMBER:** Workplace Correspondence CM2150

**DESCRIPTIVE TITLE:** Workplace Correspondence

**CALENDAR TITLE:**

**1.0 Type and Purpose** Communications 2150 gives students the opportunity to study the principles of effective writing. Applications include letters, memos, and short report writing.

**2.0 Major Topics** Review of Sentence and Paragraph Construction; Business Correspondence; Informal Report; Job Search Techniques.

**PREREQUISITES:** Nil

**CO-REQUISITES:** Nil

**COURSE DURATION** 45hrs

**SUGGESTED TEXT/  
LEARNING RESOURCES:**

**Textbooks:** Business English and Communications, Fourth Canadian Edition, Clark, Zimmer, et al., McGraw-Hill Ryerson, 1990

Student Projects and Activities for Business English and Communications,

Fourth Canadian Edition, Clark, et al., McGraw-Hill, 1990

Effective Business Writing, Jennifer MacLennon

Simon and Shuster Handbook for Writers, Second Edition, Troyka Lynn Quitman, Prentice Hall

College English Communication, Third Canadian Edition, Stewart, Zimmer, et al., McGraw-Hill Ryerson Limited, 1989

Business and Administrative Communication, Second Edition, Kitty O. Locker. IRWIN, 1991

**References:** Pittman Office Handbook, Smith/Hay-Ellis

The Gregg Reference Manual, Fourth Canadian Edition, Sabin/O'Neill

McGraw Hill Handbook

**Other Resources:** Business Letter Business (Video), Video Arts

Guest Speakers

Sell Yourself (Video)

**COURSE AIMS:**

1. To help students understand the importance of well-developed writing skills in business and in career development.
2. To help students understand the purpose of the various types of business correspondence.
3. To examine the principles of effective business writing.
4. To examine the standard formats for letters and memos.
5. To provide opportunities for students to practice writing effective letters and memos.
6. To examine the fundamentals of informal reports and the report writing procedure.
7. To provide an opportunity for students to produce and informal report.

**MAJOR TOPICS/TASKS:**

- 1.0 Review of Sentence and Paragraph Construction
- 2.0 Business Correspondence
- 3.0 Informal Report/Present Orally

**COURSE OUTLINE:**

- 1.0 Review of Sentence and Paragraph Construction
  - 1.1 Examining and applying principles of sentence construction
  - 1.2 Examining and applying principles of paragraph construction
- 2.0 Business Correspondence
  - 2.1 Examining the value of well-developed business writing skills
  - 2.2 Examining principles of effective business writing
  - 2.3 Examining business letters and memos
- 3.0 Informal Report



- 3.1 Examining the fundamentals of informal business reports
- 3.2 Applying informal report writing skills

**LEARNING OBJECTIVES:**

- 1.0 Review of Sentences and Paragraph Construction
  - 1.1.1 Define a sentence and review the four types.
  - 1.1.2 Identify the essential parts of a sentence, particularly subject and predicate, direct and indirect object.
  - 1.1.3 Differentiate among phrases, clauses, and sentences.
  - 1.1.4 Explore the major concepts related to subject-verb agreement.
  - 1.1.5 Apply rules and principles for writing clear, concise, complete sentences which adhere to the conventions of grammar, punctuation, and mechanics.
- 1.2 Examine and Apply Principles of paragraph Construction
  - 1.2.1 Discuss the basic purposes for writing.
  - 1.2.2 Define a paragraph and describe the major characteristics of an effective paragraph.
  - 1.2.3 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.
- 2.0 Business Correspondence
  - 2.1 Examine the Value of Business Writing Skills
    - 2.1.1 Discuss the importance of effective writing skills in business
    - 2.1.2 Discuss the value of well-developed writing skills to career success
  - 2.2 Examine Principles of Effective Business Writing
    - 2.2.1 Discuss the rationale and techniques for fostering goodwill in business communication, regardless of the circumstances
    - 2.2.2 Review the importance of revising and proofreading writing
  - 2.3 Examine Business Letters and Memos
    - 2.3.1 Differentiate between letter and memo applications in the workplace

- 2.3.2 Identify the parts of a business letter and memo
- 2.3.3 Explore the standard formats for business letters and memos
- 2.3.4 Examine guidelines for writing an acceptable letter and memo which convey: acknowledgment, routine request, routine response, complaint, refusal, and persuasive request, for three of the six types listed
- 2.3.5 Examine samples of well-written and poorly written letters and memos

### 3.0 Informal Report

#### 3.1 Examine the Fundamentals of Informal Business Reports

- 3.1.1 Identify the purpose of the informal report
- 3.1.2 Identify the parts and formats of an informal report
- 3.1.3 Identify methods of information gathering

#### 3.2 Apply Informal Report Writing Skills and Oral Reporting Skills

- 3.2.1 Gather pertinent information
- 3.2.2 Organize information into an appropriate outline
- 3.2.3 Draft a five minute informal report
- 3.2.4 Edit, proofread, and revise the draft to create an effective informal report and present orally using visual aids.

### **RECOMMENDED EVALUATION:**

Required Pass Mark      70%

### **DEVELOPMENT HISTORY:**

Date Developed:

Date Revised: 1999 05 03

**Name and Number:** Customer Service MR1210

**Descriptive Title:** 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.

**Prerequisites:** None

**Co-requisites:** None

**Suggested Duration:** 30 hrs

**Evaluation:** Theory and Practical Applications Require a Pass Mark of 70%.

**Course Aims:**

1. To know and understand quality customer service
2. To know why quality service is important
3. To know and understand the relationship between “service” and “sales”
4. To understand the importance of and to demonstrate a positive attitude
5. To recognize and demonstrate handling of customer complaints

**Course Objectives (Knowledge):**

1. **Providing Quality Service**
  - Define quality service
  - List the types of quality service
  - Define Service vs. Sales or Selling
  - Explain why quality service is important
  - Identify the various types of customers

- Define customer loyalty

## **2. Determining Customers Wants and Needs**

- List four levels of customer needs
- Identify important customer wants and needs
- Identify ways to ensure repeat business

## **3. Demonstrating a Positive Attitude**

- List the characteristics of a positive attitude
- Explain why it is important to have a positive attitude
- List ways that a positive attitude can improve a customer's satisfaction
- Define perception
- Explain how perception can alter us and customers
- Understand how to deal with perception

## **4. Effectively Communicating with customers**

- Describe the main elements in the communication process
- Identify some barriers to effective communication
- Define body language
- Explain how body language would affect customers
- Determine why body language is important
- Define active listening and state why it is important
- Describe the four components of active listening
- Contrast good and bad listeners
- List and discuss the steps of the listening process

## **5. Effectively using Questioning Techniques**

- List questioning techniques
- Write two example of an open question
- Perform a questioning and listening role play

## **6. Using the Telephone Effectively**

- List the qualities of a professional telephone voice
- Explain why telephone skills are important
- Demonstrate effective telephone skills

## **7. Asserting Oneself: Handling Complaints and Resolving Conflict**

- Define assertiveness
- Define communication behaviors
- Relate assertions to effective communication
- Practice being assertive
- Understand the process of assertive guidelines for action
- Practice giving an assertive greeting
- Acknowledge multiple customers

## **8. Dealing with Difficult Customers**

- Describe how you would deal with anger
- Complete a guide to controlling feelings
- Determine how you would feel dealing with an upset customer
- Suggest some techniques that might control your own feelings
- Understand leadership styles and the nature of organizations
- List ways to dealing with conflict / customer criticism
- Be aware of certain guidelines when confronting customers
- List ways of preventing unnecessary conflict with customers
- Review current skills and knowledge of customer service
- Develop a customer satisfaction improvement plan

**COURSE OUTLINE - SP 2330**

**Name and Number:** QA/QC SP2330

**Descriptive Title:** 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.

**Prerequisites:** None

**Co-requisites:** None

**Suggested Duration:** 30 Hrs

**Course Aims:**

1. To develop the skills and knowledge required to apply quality assurance/quality control procedures
2. 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
  - a. cost of quality
  - b. measurement of quality
  - c. quality control and quality assurance
  - d. elements of quality
  - e. elements of the quality audit
  - f. quality standards
  - g. role expectations and responsibilities
11. Explain the structure of quality assurance and quality control
  - a. Define quality assurance, quality control and documentation terminology
  - b. Describe organizational charts
  - c. List the elements of a quality assurance system
  - d. Explain the purpose of the quality assurance manual
  - e. Describe quality assurance procedures
  - f. Explain the key functions and responsibilities of personnel
12. Complete quality assurance/quality control documentation
  - a. Describe methods of recording reports in industry
  - b. Describe procedures of traceability (manual and computer-based recording)
  - c. Identify needs for quality control procedures

**Major Tasks / Subtasks (Skills):**

1. Apply quality control to projects
  - a. Follow QA/QC procedures for drawings, plans and specifications in applicable occupations.
  - b. Calibrate measuring instruments and devices in applicable occupations.
  - c. Interpret required standards
  - d. Follow QA/QC procedures for accepting raw materials
  - e. Carry out the project
  - f. Control the quality elements (variables)
  - g. Complete QA/QC reports

**Evaluation:**

Pass Mark Required 70%

**Development History:**

Date Developed: February 1994

Date Revised: April, 1999



## COURSE DESCRIPTION

**COURSE NAME & NUMBER:** Introduction to Computers MC1050

**DESCRIPTIVE TITLE:** Introduction to Computers

**CALENDAR ENTRY:**

**Type and Purpose** 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.

**Major Topics** Microcomputer System Hardware and Software Components; Word Processing; Electronic Spreadsheets; Electronic Mail and the Internet.

**PRE-REQUISITES:** Nil

**CO-REQUISITES:** Nil

**SUGGESTED DURATION:** 30 hours

**SUGGESTED TEXT/**

**LEARNING RESOURCES:**

**Textbook(s):**

**References:**

**Other Resources:**

**COURSE AIMS:**

1. To provide students with a introduction to computer systems and their operation.
2. To introduce students to popular software packages, their applications and future trends in computer applications.

**MAJOR TOPICS:**

1. Microcomputer System Hardware and Software Components
2. Word Processing
3. Spreadsheet
4. E-Mail and the Internet

**COURSE OUTLINE:**

- 1.0 Microcomputer System Hardware and Software Components
  - 1.1 Microcomputer Hardware
    - 1.1.1 System Components
    - 1.1.2 Function of each Component
  - 1.2 Microcomputer Software
    - 1.2.1 Software Definition and Types
    - 1.2.2 System Software (Windows 95)
    - 1.2.3 File Management Commands (Windows 95)
2. Word Processing
  - 2.1 Keyboarding Techniques
  - 2.2 Word Processing
    - 2.2.1 Understanding Word Processing
    - 2.2.2 Create a Document
    - 2.2.3 Save, Open and Edit a Document
    - 2.2.4 Edit a Document: Cut and Paste
    - 2.2.5 Understand Hidden codes.
    - 2.2.6 The Select Feature (Block)
    - 2.2.7 Change Layout Format
    - 2.2.8 Change Text Attributes
    - 2.2.9 Use Auxiliary Tools
    - 2.2.10 Select the Print Feature (number of copies and current document)
3. Electronic Spreadsheet

- 3.1 Spreadsheet Basics
  - 3.2 Operate Menus
  - 3.3 Create a Worksheet
  - 3.4 Use Ranges
  - 3.5 Print a Worksheet
  - 3.6 Edit a worksheet
4. Electronic Mail and the Internet
- 4.1 Electronic Mail
  - 4.2 The Internet

**Learning Objectives:**

1. Microcomputer System Hardware and Software Components
- 1.1 Microcomputer Hardware
    - 1.1.1 System Components
      - 1.1.1.1 Identify major components of a computer system.
    - 1.1.2 Function of each Component
      - 1.1.2.1 Describe the function of the microprocessor.
      - 1.1.2.2 Describe and give examples of I/O DEVICES.
      - 1.1.2.3 Describe primary storage (RAM, ROM, Cache).
      - 1.1.2.4 Define bit, byte, code and the prefixes k.m. and g.
      - 1.1.2.5 Describe secondary storage (diskettes and hard disks, CD ROMS, Zip Drives etc).
      - 1.1.2.6 Describe how to care for a computer and its accessories.
  - 1.2 Microcomputer Software
    - 1.2.1 Software Definition and Types
      - 1.2.1.1 Define software.
      - 1.2.1.2 Describe, operational and application software used in this course.
      - 1.2.1.3 Define file and give the rules for filenames and file extensions..

1.2.2 System Software (Windows 95)

- 1.2.2.1 Getting Started with Windows
- 1.2.2.2 Start and quit a Program
- 1.2.2.3 Get Help
- 1.2.2.4 Locate a specific file using the **find** function of Win95
- 1.2.2.5 Changing system settings: wall paper, screen saver, screen resolution, background.
- 1.2.2.6 Starting a program by using the Run Command
- 1.2.2.7 Shutting down your computer

1.2.3 File Management Commands (Windows 95)

- 1.2.3.1 View directory structure and folder content
- 1.2.3.2 Organizing files and folders
- 1.2.3.3 Copy, delete, and move files and folders
- 1.2.3.4 Create folders
- 1.2.3.5 Maximize and minimize a window
- 1.2.3.6 Print directory/folder content
- 1.2.3.7 Describe the Windows 95 taskbar

2. Word Processing

2.1 Keyboarding Techniques

- 2.1.1 Identify and locate alphabetic and numeric keys
- 2.1.2 Identify and locate function keys: special keys, home keys, page up key, page down key, numeric key pad, shift keys, punctuation keys, tab key

2.2 Word Processing

2.2.1 Understanding word processing

- 2.2.1.1 The Windows Component
- 2.2.1.2 The Menu Bar
- 2.2.1.3 Menu Indicators
- 2.2.1.4 The Document Window
- 2.2.1.5 The Status Bar
- 2.2.1.6 The Help Feature
- 2.2.1.7 Insertion Point Movements

2.2.2 Create a document

2.2.2.1 Change the Display

2.2.2.2 The Enter Key

2.2.2.3 Enter Text

2.2.3 Save, Open and Exit a document.

2.2.3.1 Save a document

2.2.3.2 Close a document.

2.2.3.3 Start a new document Window

2.2.3.4 Open a document

2.2.3.5 Exit Word Processor

2.2.4 Edit a Document

2.2.4.1 Add New Text

2.2.4.2 Delete text

2.2.4.3 Basic Format Enhancement (split and join paragraphs, insert text)

2.2.5 Understand Hidden Codes

2.2.5.1 Display Hidden Codes

2.2.5.2 Delete Text Enhancements

2.2.6 The Select Feature

2.2.6.1 Identify a Selection

2.2.6.2 Move a Selection

2.2.6.3 Copy a Selection

2.2.6.4 Delete a Selection

2.2.6.5 Select Enhancements

2.2.6.6 Save a Selection

2.2.6.7 Retrieve a Selection

2.2.7 Change Layout Format

2.2.7.1 Change layout format: (margins, spacing, alignment, paragraph indent, tabs, line spacing, page numbering)

2.2.8 Change Text Attributes

- 2.2.8.1 Change text attributes: (bold, underline, font, etc.)
- 2.2.9 Use Auxiliary Tools
  - 2.2.9.1 Spell Check
- 2.2.10 Select the Print Feature
  - 2.2.10.1 Select the Print Feature: (i.e; number of copies and current document)
  - 2.2.10.2 Identify various options in print screen dialogue box
- 3. Electronic Spreadsheet
  - 3.1 Spreadsheet Basics
    - 3.1.1 The Worksheet Window
  - 3.2 Operates Menus
    - 3.2.1 Use a Menu Bar
    - 3.2.2 Use a Control Menu
    - 3.2.3 Use a Shortcut Menu
    - 3.2.4 Save, Retrieve form Menus
  - 3.3 Create a Worksheet
    - 3.3.1 Enter Constant Values and Formulas
    - 3.3.2 Use the Recalculation Feature
    - 3.3.3 Use Cell References (relative and absolute references)
  - 3.4 Use Ranges
    - 3.4.1 Type a Range for a Function
    - 3.4.2 Point to a Range for a Function
    - 3.4.3 Select a Range for Toolbar and Menu Commands
  - 3.5 Print a Worksheet
    - 3.5.1 Print to the Screen
    - 3.5.2 Print to the Printer
    - 3.5.3 Print a Selected Range
  - 3.6 Edit a Worksheet

- 3.6.1 Replace Cell Contents
- 3.6.2 Insert and Delete Rows and Columns
- 3.6.3 Change Cell Formats
- 3.6.4 Change Cell Alignments
- 3.6.5 Change Column Width
- 3.6.6 Copy and Move Cells

4. Electronic Mail and the Internet

4.1 Electronic Mail

- 4.1.1 Compose and send an e-mail message
- 4.1.2 Retrieve an e-mail attachments
- 4.1.3 Send an e-mail message with attachments
- 4.1.4 Retrieve and save e-mail attachments
- 4.1.3 Print an e-mail message
- 4.1.4 Delete an e-mail message

4.2 The Internet

- 4.2.1 Overview of the World Wide Web
- 4.2.2 Accessing Web sites
- 4.2.3 Internet Web Browsers
- 4.2.4 Internet Search Engines
- 4.2.5 Searching Techniques

**STUDENT EVALUATION:**

Required Pass Mark            70%

**DEVELOPMENT HISTORY:**

**Date Designed            1998**  
**Date Revised            1999**

**COURSE OUTLINE - SD 1700**

**Name and Number:** Workplace Skills SD 1700

**Descriptive Title:** 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.

**Prerequisites:** None

**Co-requisites:** None

**Suggested Duration:** 30 Hrs

**Course Aims:**

1. Participate in meetings (conduct meetings).
2. Be aware of union procedures.
3. Be aware of workers' compensation regulations.
4. Be aware of occupational health and safety regulations.
5. Be aware of employment insurance regulations
6. Be aware of workers' rights.
7. Be aware of human rights

**Course Objectives (Knowledge):**

1. Meetings
  - a. Explain preparation requirements prior to conducting a meeting
  - b. Explain the procedures for conducting a meeting.
  - c. Explain participation in meetings.
  - d. Explain the purpose of motions.



- h. Explain the procedure to delay discussion of motions.
  - i. Explain how to amend and vote upon a motion.
2. Unions
- a. Why do unions exist?
  - b. Give a concise description of the history of Canadian labour.
  - c. How do unions work?
  - d. Explain labour's structure.
  - e. Describe labour's social objectives.
  - f. Describe the relationship between Canadian labour and the workers.
  - g. Describe the involvement of women in unions.
3. Worker's Compensation
- a. Describe the aims, objectives, benefits and regulations of the Workers Compensation Board.
  - b. Explain the internal review process.
4. Occupational Health and Safety
- a. Describe the rules and regulations directly related to your occupation.
5. Employment Insurance Regulations
- a. Explain employment insurance regulations
  - b. Describe how to apply for employment insurance.
  - c. Explain the appeal process.
6. Worker's Rights
- a. Define labour standards.
  - b. Explain the purpose of the Labour Standards Act.
  - c. List regulations pertaining to:
    - i. Hours of work.
    - ii. Minimum wage.
    - iii. Employment of children.
    - iv. Vacation pay
7. Human Rights
- a. Describe what information cannot be included on an application.
  - b. Describe what information cannot be included in an interview
  - c. Why is there a Human Rights Code?
  - d. Define sexual harassment.

**Major Tasks / Subtasks (Skills):**

1. Participate in meetings.
  - a. Follow the form of getting a motion on the floor
  - b. Discuss a motion
  - c. Amend a motion
  - d. Vote on a motion.
2. Complete a safety inspection of your shop.
3. Complete an employment insurance application form.
4. Write a letter of appeal.
5. Analyze a documented case of a human rights complaint with special emphasis on the applicatin form, time-frame, documentation needed, and legal advice available.

**Evaluation:**

Required Pass Mark            70%

**Development History:**

Date Developed:  
Date Revised:            April, 1999

**Name and Number:** Job Search Techniques SD 1710

**Descriptive Title:** Job Search Techniques

**Prerequisites:** None

**Co-requisites:** None

**Suggested Duration:** 15 hrs.

**Evaluation:** Theory and Practical Applications Require a Pass Mark of 70%.

**Course Objectives (Knowledge):**

**1. Examine and Demonstrate Elements of Effective Job Search Techniques**

- Identify and examine employment trends and opportunities
- Identify sources that can lead to employment
- Discuss the importance of fitting qualifications to job requirements
- Discuss and demonstrate consideration in completing job application forms
- Establish the aim/purpose of a resume
- Explore characteristics of effective resumes, types of resumes, and principles of resume format
- Explore characteristics of and write an effective cover letter
- Explore, and participate in a role play of a typical job interview with commonly asked questions and demonstrate proper conduct
- Explore other employment related correspondence
- Explore the job market to identify employability skills expected by employer
- Conduct a self-analysis and compare with general employer expectations

**DEVELOPMENT HISTORY:**

Date Developed:

Date Revised: 1999 05 03

**Name and Number:** Entrepreneurial Awareness SD 1720

**Descriptive Title:** Entrepreneurial Awareness

**Prerequisites:** None

**Co-requisites:** None

**Suggested Duration:** 15 hrs

**Evaluation:** Theory and Practical Applications Require a Pass Mark of 70%.

**Course Objectives (Knowledge):**

- 1. Explore Self-Employment: An Alternative to Employment**
  - Identify the advantages and disadvantages of self-employment vs. regular employment
  - Differentiate between an entrepreneur and a small business owner
  - Evaluate present ideas about being in business
  
- 2. Explore the Characteristic of Entrepreneurs**
  - Identify characteristics common to entrepreneurs
  - Relate their own personal characteristics with those of entrepreneurs.
  - Evaluate their present ideas about business people
  
- 3. Identifying Business Opportunities**
  - Distinguish between an opportunity and an idea.
  - List existing traditional and innovative business ventures in the region.
  - Explain the general parameters between which business ventures should fit.
  - Summarize the role of such agencies Regional Economic Development Boards, Business Development Corporations, etc.
  - Identify potential business opportunities within the region.
  
- 4. Demystifying the Entrepreneurial Process.**
  - Explain the entrepreneurial process
  - Describe the purpose of a business plan
  - Identify the main ingredients of a business plan
  - Summarize the role of such agencies as BDC's, ACOA, Women's Enterprise Bureau etc.
  - List other agencies where assistance - financial and otherwise - is available to those interested in starting a business venture.



## REQUIRED WORK EXPERIENCES

National Red Seal 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 Red Seal Examination.

**REQUIRED WORK EXPERIENCES:**

Use shop tools, equipment, and facilities in a safe manner.

Follow safety regulations and assess conditions such as weather, road, vehicle, traffic, and driver.

Plan lifting strategies, operate equipment, and prevent emergencies by observing safety rules.

Maintain equipment and adjust components following manufacturers recommendations.

Interpret regulations and emergency procedures and integrate into work practices.

Inspect cranes and perform pre-operational checks.

Consider variables, make calculations, set up crane, rig a load, confirm the LMI, signal, and move a load.

Inspect, start up, manoeuvre, assemble, set up, plan strategies, hoist load, shut down, and dismantle mobile lattice boom cranes.

Assemble, inspect, start up, manoeuvre, set up, plan strategies, hoist load, shut down, dismantle mobile hydraulic boom cranes.

Prepare cranes for transport.

Travel cranes on highways.

Travel cranes over rough terrain.