
Plan of Training

CONCRETE FINISHER



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

September 2009

PLAN OF TRAINING

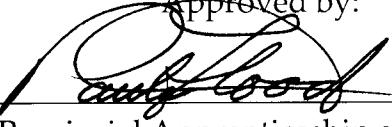
CONCRETE FINISHER

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Approved by:


Chairperson, Provincial Apprenticeship and Certification Board

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Plan of Training – Concrete Finisher

The Joint Planning Committee (JPC) recognizes this Interprovincial Program Guide as the national curriculum for the occupation of Concrete Finisher.

Preface

This Apprenticeship Standard is based on the 2006 edition of the National Occupational Analysis for the Concrete Finisher Trade.

This document describes the curriculum content for the Concrete Finisher apprenticeship training program and outlines each of the technical training units necessary for the completion of apprenticeship.

Acknowledgements

Advisory committees, industry representatives, instructors and apprenticeship staff provided valuable input to the development of this Apprenticeship Curriculum Standard. Without their dedication to quality apprenticeship training, this document could not have been produced.

We offer you a sincere thank you.

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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) <i>if applicable</i> , plus sign-off of workplace skills required for certification totaling a minimum of 7200 hours**	Write Certification Examination

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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

* 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	1 st 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.
	2 nd Year	70%	
	3 rd Year	80%	
	4 th Year	90%	
5400 Hours and 4800 Hours	1 st Year	60%	(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.
	2 nd Year	75%	
	3 rd Year	90%	
4000 Hours			

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 Red Seal 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 5400 hours.

OR

A total of 7200 hours of suitable work experience in the occupation accompanied by sign-off of required work competencies.

4. Completion of a National Red Seal examination, to be set at a place and time determined by the Institutional and Industrial Education Division.
5. Payment of the appropriate examination fee.

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 counselors, 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/inter-provincial 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. Glossary of Terms

These definitions are intended as a guide to how language is used in the IPGs.

ADJUST	To put in good working order; regulate; bring to a proper state or position.
APPLICATION	The use to which something is put and/or the circumstance in which you would use it.
CHARACTERISTIC	A feature that helps to identify, tell apart, or describe recognizably; a distinguishing mark or trait.
COMPONENT	A part that can be separated from or attached to a system; a segment or unit.
DEFINE	To state the meaning of (a word, phrase, etc.).
DESCRIBE	To give a verbal account of; tell about in detail.
DIAGNOSE	To analyze or identify a problem or malfunction.
EXPLAIN	To make plain or clear; illustrate; rationalize.
IDENTIFY	To point out or name objectives or types.
INTERPRET	To translate information from observation, charts, tables, graphs, and written material.
MAINTAIN	To keep in a condition of good repair or efficiency.
METHOD	A means or manner of doing something that has procedures attached to it.
OPERATE	How an object works; to control or direct the functioning of.
PROCEDURE	A prescribed series of steps taken to accomplish an end.

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PURPOSE	The reason for which something exists or is done, made or used.
SERVICE	Routine inspection and replacement of worn or deteriorating parts.
	An act or business function provided to a customer in the course of one's profession. (e.g., haircut).
TEST	<p>v. To subject to a procedure that ascertains effectiveness, value, proper function, or other quality.</p> <p>n. A way of examining something to determine its characteristics or properties, or to determine whether or not it is working correctly.</p>

E. Program Outcomes

Upon completion of the Apprenticeship Program, apprentices will have the knowledge and skills required to perform the following tasks:

Task 1	Use tools and equipment
Task 2	Organize work
Task 3	Prepare site
Task 4	Use formwork
Task 5	Place concrete
Task 6	Level concrete
Task 7	Float concrete
Task 8	Hand-tool concrete
Task 9	Trowel concrete
Task 10	Apply surface treatments to plastic concrete
Task 11	Cure concrete
Task 12	Protect concrete
Task 13	Repair concrete
Task 14	Cut and core cured concrete
Task 15	Apply surface treatment to hardened concrete
Task 16	Grout

F. 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.

ENTRY LEVEL TRAINING – BLOCK 1			
NL Course No.	Course Name	Hours	Pre- Requisite
TS1510	Occupational Health and Safety	6	
TS1520	WHMIS	6	
TS1530	Standard First Aid	14	
FC1100	Hand and Power Tools I	18	
FC1110	Safety I	9	
FC1120	Concrete	15	
FC1130	Concrete Placement and Finishing	90	
FC1140	Concrete Curing	16	
FC1150	Estimating and Plans I	36	MA1060
AP1100	Introduction to Apprenticeship	15	
*MA1060	Basic Math	60	
CM2150	Workplace Communications	45	
MR1220	Customer Service	30	
SP2330	Quality Assurance/Quality Control	30	
MC1050	Introduction to Computers	30	
SD1700	Workplace Skills	30	
SD1710	Job Search Techniques	15	
SD1720	Entrepreneurial Awareness	15	
TOTAL HOURS		480	

480 hours ÷30 hrs = 16 weeks of training

Required Work Experience

ADVANCED LEVEL TRAINING – BLOCK 2			
NL Course No.	Course Name	Hours	Pre-Requisite
FC2100	Hand and Power Tools II	12	Block 1
FC2110	Safety II	10	Block 1
FC2120	Site Layout and Forms	18	Block 1
FC2130	Concrete Materials	14	Block 1
FC2140	Concrete Finishing and Curing	90	Block 1
FC2150	Estimating and Plans II	36	Block 1
FC2160	Concrete Repair and Grouting	60	Block 1
TOTAL HOURS		240	

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.**

240 hours ÷30 hrs = 8 weeks of training

Entry Level – Block 1

TS1510 Occupational Health and Safety

Description:

This course is designed to give participants the knowledge and skills necessary to interpret the Occupational Health and Safety Act, laws and regulations; understand the designated responsibilities within the laws and regulations; the right to refuse dangerous work; and the importance of reporting accidents.

Pre-Requisites: None

Course Outcomes:

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

- prevent accidents and illnesses
- improve health and safety conditions in the workplace

Theory:

1. Interpret the Occupational Health and Safety Act laws and regulations.
 - i. explain the scope of the act
 - application of the act
 - Federal/Provincial jurisdictions
 - Canada Labour Code
 - rules and regulations
 - private home application
 - conformity of the Crown by the Act
2. Explain responsibilities under the Act & Regulations.
 - i. duties of employer, owner, contractors, sub-contractors, employees, and suppliers
3. Explain the purpose of joint health and safety committees
 - i. formation of committee

- ii. functions of committee
- iii. legislated rights
- iv. health and safety representation
- v. reporting endangerment to health
- vi. appropriate remedial action
- vii. investigation of endangerment
- viii. committee recommendation
- ix. employer's responsibility in taking remedial action

4. Examine right to refuse dangerous work.

- i. reasonable grounds for refusal
- ii. reporting endangerment to health
- iii. appropriate remedial action
- iv. investigation of endangerment
- v. committee recommendation
- vi. employer's responsibility to take appropriate remedial action
- vii. action taken when employee does not have reasonable grounds for refusing dangerous work
- viii. employee's rights
- ix. assigning another employee to perform duties
- x. temporary reassignment of employee to perform other duties
- xi. collective agreement influences
- xii. wages and benefits

5. State examples of work situations where one might refuse work.

6. Describe discriminatory action.

- i. definition
- ii. filing a complaint procedure
- iii. allocated period of time a complaint can be filed with the Commission
- iv. duties of an arbitrator under the Labour Relations Act
- v. order in writing inclusion
- vi. report to commission Allocated period of time to request Arbitrator to deal with the matter of the request
- vii. notice of application
- viii. failure to comply with the terms of an order
- ix. order filed in the court

7. Explain duties of commission officers.

- i. powers and duties of officers
- ii. procedure for examinations and inspections
- iii. orders given by officers orally or in writing
- iv. specifications of an order given by an officer to owner of the place of employment, employer, contractor, sub-contractor, employee, or supplier
- v. service of an order
- vi. prohibition of persons towards an officer in the exercise of his/her power or duties
- vii. rescinding of an order
- viii. posting a copy of the order
- ix. illegal removal of an order

8. Interpret appeals of others.

- i. allocated period of time for appeal of an order
- ii. person who may appeal order
- iii. action taken by Commission when person involved does not comply with the order
- iv. enforcement of the order
- v. notice of application
- vi. rules of court

9. Explain the process for reporting of accidents.

- i. application of act
- ii. report procedure
- iii. reporting notification of injury
- iv. reporting accidental explosion or exposure
- v. posting of act and regulations

Practical:

1. Conduct an interview with someone in your occupation on two or more aspects of the act and report results.
2. Conduct a safety inspection of shop area.

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 & 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 from 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

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

FC1100 Hand and Power Tools I

Learning Outcomes:

- Demonstrate knowledge of hand and power tools, their use and care.

Pre-Requisites: None

Objectives and Content:

1. Identify measuring tools.
2. Identify hand levels.
3. Describe lines and accessories.
4. Describe miscellaneous layout and alignment tools.
5. Describe the use of cutting and fastening tools.
6. Describe the use of dismantling and demolition tools.
7. Describe the use of chipping and abrading tools.
8. Describe conveying and distributing tools.
9. Describe vibrators and consolidating tools.
10. Describe the use of floats and darbies.
11. Describe the use of trowels, edgers and jointers.
12. Describe the use of brushes and finishing brooms.
13. Describe clean up and maintenance procedures for hand tools.
14. Describe types of mixers.
15. Describe the principles of mixing concrete.

16. Describe the principles of mixing concrete.
17. Describe the principles of concrete transport.
18. Describe concrete conveying equipment.
19. Describe the process of power floating.
20. Describe the process of power trowelling.
21. Identify and describe safe use of power trowels.
22. Describe the use of sprayers.

Practical:

No practical

FC1110 Safety I

Learning Outcomes:

- Demonstrate knowledge of safe work practices.
- Demonstrate knowledge of regulatory requirements pertaining to safety.
- Demonstrate knowledge of safety equipment, their applications and procedures for use.

Pre-Requisites:

Objectives and Content:

1. Describe selected safety provisions for machinery.
2. Describe scaffolding requirements.
3. Describe minimum requirements of ladders.
4. Describe minimum requirements of personal protective equipment.
5. Describe protection in industry environments.
6. Describe procedures for working with toxic materials.
7. Recognize potentially dangerous fire hazards and assess preventative measures.
8. Identify fires by class to ensure the correct equipment is used for fire control.
9. Locate and identify the fire extinguishers and alarm controls in the shop and learning resources area.
10. Describe the safety and maintenance requirements of electrically powered tools.
11. Describe the safety and maintenance requirements of gasoline powered tools.
12. Describe the ventilation requirements for gasoline powered engines.
13. Describe the safety and maintenance requirements of compressors.

Practical:

1. Demonstrate the correct use of various fire extinguishers.

FC1120 Concrete

Learning Outcomes:

- Demonstrate knowledge of Portland cements, admixtures, aggregates and the methods of transporting concrete.

Pre-Requisites: None

Objectives and Content:

1. Identify the different types and make up of Portland cements, and their applications.
2. Describe the applications of the different types of Portland cements.
3. Describe fly ash.
4. Describe silica fume.
5. Identify and describe admixtures such as air entrainment, retarders, plasticizers.
6. Describe course and fine aggregates.
7. Describe the effect of aggregates on concrete quality.
8. Describe methods of concrete transportation.
9. Describe concrete placement for forms and decks with reference to consolidation and integration of deposits (lifts).
10. Identify and describe the cause of segregation and the use of chutes, tremies and pumps.

Practical:

No practical

FC1130 Concrete Placement and Finishing

Learning Outcomes:

- Demonstrate knowledge of concrete placement and finishing, and of concrete joints.
- Demonstrate knowledge of the procedures used to perform concrete placement and finishing.

Pre-Requisites: None

Objectives and Content:

1. Identify site preparation elements such as elevation and grades.
2. Describe methods of depositing concrete.
3. Describe methods of consolidating concrete.
4. Describe screeding, bull floating and hand tools.
5. Identify surface treatments.
6. Describe how to create various surface treatments.
7. Compare the three basic types of functional joints:
 - i. control (contraction) joints
 - ii. isolation (expansion) joints
 - iii. construction joints

Practical:

1. Layout flat slab.
2. Prepare forms for a slab.
3. Place concrete in slab forms.

4. Finish slab.
5. Place and finish concrete stairs.

FC1140 Concrete Curing

Learning Outcomes:

- Demonstrate knowledge of concrete curing and cutting methods.

Pre-Requisites: None

Objectives and Content:

1. Describe curing compounds.
2. Describe curing with water.
3. Explain the importance of hydration to the curing of concrete.
4. Describe the tools and saw blades used to cut curing concrete.

Practical:

1. Cure concrete.
2. Saw cut concrete.

FC1150 Estimating and Plans I

Learning Outcomes:

- Demonstrate knowledge of the procedures and practices used to perform concrete measurement calculations.
- Demonstrate knowledge of residential blueprints and their interpretation.

Pre-Requisites: MA1050

Objectives and Content:

1. Use formulas to calculate perimeters and circumferences.
2. Use the Pythagorean Theorem to calculate problems involving right triangles.
3. Correctly identify and use formulas dealing with volumes.

Practical:

1. Study an example estimate of foundation concrete and related work.
2. Estimate a series of concrete and related work problems.
3. Read and interpret a set of residential blueprints showing:
 - i. foundation plan
 - ii. floor plan
 - iii. elevations
 - iv. sections and details
 - v. other trades
4. Identify and interpret scale rules and how to apply them.
5. Identify and draw detail symbols of materials used in sectional and other drawings.
6. Identify and describe alphabet of lines.

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 administering apprenticeship
 - ii. Department of Education
 - iii. 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

- iv. explain when and where to take the in-class portion of advance training
- v. discuss class calls
- vi. Training Institutions
- vii. various delivery methods
- viii. 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 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. Journey person
 - 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

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 Institutional and Industrial Education, Standards and Curriculum Division 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.

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 and 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.

MR1220 Customer Service

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.

Course Outcomes:

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

- 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.

Pre-Requisites: None

Objectives and Content:

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 and 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 and 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.

SP2330 Quality Assurance/Quality Control

Description:

This course is designed to give students an understanding of the concepts and requirements of QA/QC such as, 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.

Course Outcomes:

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

- Develop the skills and knowledge required to apply quality assurance/quality control procedures as related to the trade.
- Develop an awareness of quality principles and processes.
- Apply quality assurance/quality control procedures in a shop project.

Pre-Requisites: None

Objectives and Content:

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 specifications and processes 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 a quality environment.
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 in various occupations.
10. Explain the concepts of quality.
 - i. cost of quality
 - ii. measurement of quality
 - iii. elements of quality
 - iv. elements of the quality audit
 - v. quality standards
 - vi. role expectations and responsibilities
11. Explain the structure of quality assurance and quality control.
 - i. describe organizational charts
 - ii. identify the elements of quality assurance system such as ISO, CSA, WHMIS, Sanitation Safety Code (SSC)
 - iv. explain the purpose of the quality assurance manual
 - v. describe quality assurance procedures
12. Examine 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

Practical:

1. Apply quality control to a project.
 - 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

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 and 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, background
- v. start a program by using the Run command
- vi. 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 and 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.

SD1700 Workplace Skills

Description:

This course involves participating in meetings, information on formal meetings, unions, workers' compensation, employment insurance regulations, workers' rights and human rights.

Course Outcomes:

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

Pre-Requisites: None

Objectives & Content:

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 and 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.

SD1710 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.

SD1720 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 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

Advanced Level – Block 2

FC2100 Hand and Power Tools II

Learning Outcomes:

- Demonstrate knowledge of hand tools, their applications, maintenance and procedures for use.
- Demonstrate knowledge of concrete cutting tools, their applications, maintenance and procedures for use.

Pre-Requisites: Block 1

Objectives and Content:

1. Describe the use of power screeds.
2. Describe the use of vibrators.
3. Describe the use of sprayers.
4. Describe the use of grinders
5. Describe the use of scabblers.
6. Describe the use of scarifiers.
7. Describe the tools used to cut concrete.
8. Describe saw blades used to cut concrete.
9. Describe the tools used to drill and core cured concrete.

Practical:

1. Roughen concrete surfaces using appropriate tools.

FC2110 Safety II

Learning Outcomes:

- Demonstrate knowledge of safe work practices.
- Demonstrate knowledge of regulatory requirements pertaining to safety.
- Demonstrate knowledge of safety equipment, their applications and procedures for use.

Pre-Requisites: Block 1

Objectives and Content:

1. Review Occupational Health and Safety regulations.
2. Review the use of personal protective equipment.
3. Review the use of fire extinguishers and fire controls.
4. Review the safe use of power tools.

Practical:

No practical

FC2120 Site Layout and Forms

Learning Outcomes:

- Demonstrate knowledge of leveling and grading procedures, site preparation, and methods of forming.
- Demonstrate knowledge of concrete reinforcing and accessories.
- Demonstrate knowledge of the procedures used to construct flat slab formwork.

Pre-Requisites: Block 1

Objectives and Content:

1. Describe zoning, bylaws and permits required before preparing site.
2. Identify the location of utilities on a property.
3. Interpret soil analysis reports for slabs on grade.
4. Describe the procedures for cut and fill and compaction.
5. Describe fillcrete.
6. Identify builder's levels, their parts, accessories and uses.
7. Identify and describe leveling rods.
8. Describe transfer of elevations.
9. Describe cut and fill and grades or slopes.
10. Identify and describe the use of laser levels.
11. Identify and describe the use of hand levels, line levels, and string line to determine elevations.
12. Identify typical slab on grade forms.

13. Describe beam and girder for systems, including spandrel beams.
14. Identify slab decks and ribbed and waffle systems.
15. Describe the forces transmitted during placement of concrete.
16. Identify critical areas informs that could cause a failure during concrete casting and describe how forms are designed to minimize this risk.
17. Describe form watching.
18. Identify concrete stairs and forming methods.
19. Describe the gauges and types of welded wire fabric.
20. Identify type and sizes of deformed bars.
21. Identify reinforcing placement for concrete stairs.
22. Identify steel fibres and fibre reinforcement.

Practical:

1. Establish the base line.
2. Establish corners.
3. Erect bater boards.
4. Set edge forms to grade.
5. Set grade stakes.
6. Set screeds.

FC2130 Concrete Materials

Learning Outcomes:

- Demonstrate knowledge of concrete design, dry state characteristics, additives, toppings and grouts.
- Demonstrate knowledge of the procedures used to test concrete in the plastic state.
- Demonstrate knowledge of pre-cast concrete.

Pre-Requisites: Block 1

Objectives and Content:

1. Define normal and special purpose aggregates and how normal density aggregate quality is controlled.
2. Identify the range of compressive strengths of concrete batches and the typical demands in industry.
3. Compare batching by weight and by volume.
4. Describe the hydration process and how to retain moisture.
5. Describe curing methods in hot and cold weather.
6. Identify and describe tests conducted on plastic concrete.
7. Identify and describe various slumps of concrete.
8. Define admixtures for concrete.
9. Identify admixtures, their uses and limitations.
10. Describe the following three most commonly used admixtures
 - i. water reducing
 - ii. air entraining
 - iii. accelerating
11. Describe where and how topping finishes are used and applied.

12. Identify the basic composition of grouts and mortars.
13. Describe the application of grouts and mortars.
14. Describe patching and bonding materials.
15. Compare post-tensioned and pre-tensioned pre-cast members.
16. Describe tilt up units.

Practical:

1. Perform slump and air tests

FC2140 Concrete Finishing and Curing

Learning Outcomes:

- Demonstrate knowledge of architectural and special concrete finishes.
- Demonstrate knowledge of hot and cold weather curing.
- Demonstrate knowledge of the procedures used to place and finish concrete.

Pre-Requisites: Block 1

Objectives and Content:

1. Describe rubbed and floated finishes.
2. Describe parged and stuccoed finishes.
3. Describe spray-on coatings.
4. Describe the use of white and coloured concrete.
5. Describe exposed aggregate finishes.
6. Describe the use of:
 - i. stamps
 - ii. mules
 - iii. templates
 - iv. special forms
 - v. form liners
7. Describe the dry shake method of finishing concrete.
8. Describe white and coloured concrete finishing methods.
9. Describe surface hardeners and slip resistance.
10. Describe non-slip finishes.
11. Describe seeded exposed aggregate finishes.

12. Identify commonly used special finishes.
13. Describe the use of epoxies.
14. Explain the application of polyurethane and polyester coatings.
15. Explain cold weather curing procedures.
16. Explain hot weather curing procedures.

Practical:

1. Finish a coloured slab with a stamped surface pattern.
2. Apply a coloured hardener using the dry shake method.
3. Use the water washing and brushing method to achieve an exposed aggregate finish.
4. Use the seeding method to achieve an exposed aggregate finish.

FC2150 Estimating and Plans II

Learning Outcomes:

- Demonstrate knowledge of common math operations used in concrete calculations.
- Demonstrate the ability to solve calculation problems.
- Demonstrate knowledge of commercial blueprints and their interpretation.

Pre-Requisites: Block 1

Objectives and Content:

1. Review basic math operations.
2. Review math operations related to percentage, ratio, proportion and perimeters.
3. Review math operations related to Pythagorean Theorem, areas and volumes.

Practical:

1. Calculate foundation concrete volumes.
- 2.
3. Read and interpret commercial building blueprints showing:
 - i. floor plans and elevations
 - ii. building sections and elevations
 - iii. room finish
 - iv. wall sections
 - v. miscellaneous details
 - vi. structural details
 - vii. mechanical layout
 - viii. electrical layout
 - ix. site plan
 - x. details drawing
4. Identify and describe alphabet of lines

FC2160 Concrete Repair and Grouting

Learning Outcomes:

- Demonstrate knowledge of the procedures to inspect, identify and repair damages and defects in concrete
- Demonstrate knowledge of the procedures used to prepare, place and finish grouts and epoxies

Pre-Requisites: Block 1

Objectives and Content:

1. Identify types and causes of defects such as bug holes, honeycombs, vibration and stress.
2. Identify methods used to inspect and access concrete.
3. Identify types of removal equipment.
4. Describe methods of removal.
5. Identify types of material used to repair concrete.
6. Describe the methods to complete a repair.
7. Describe grout / epoxy installation procedures.
8. Identify surface grout / epoxy preparation techniques.
9. Describe grout / epoxy mixing and installation procedures.

Practical:

1. Complete repairs on concrete sample.
2. Complete grouting operation using dry-pack method.
3. Complete a troweled epoxy floor.

APPENDIX

Profile Chart

OCCUPATIONAL SKILLS			
FC1100 Hand and Power Tools I	FC1110 Safety I	FC1130 Concrete Placement and Finishing	FC1150 Estimating and Plans I
FC2100 Hand and Power Tools II	FC2110 Safety II	FC2120 Site Layout and Forms	FC2150 Estimating and Plans II
CM2150 Workplace Communications	SD1700 Workplace Skills		
CONCRETE PLACEMENT			
FC1120 Concrete	FC1130 Concrete Placement and Finishing		
CONCRETE FINISHING			
FC1130 Concrete Placement and Finishing	FC2140 Concrete Finishing and Curing		
CONCRETE CURING AND PROTECTION			
FC1140 Concrete Curing	FC2140 Concrete Finishing and Curing		
CONCRETE MODIFICATION, REPAIR AND GROUTING			
FC1140 Concrete curing	FC2100 Hand and Power Tools II	FC2130 Concrete Materials	FC2140 Concrete Finishing and Curing
FC2160 Concrete Repair and Grouting			

NOA Comparison Table

NOA Sub-task		Plan of Training Unit	
Task 1 – Uses tools and Equipment			
1.01	Uses hand tools	FC1100	Hand and Power Tools I
1.02	Uses power tools		Hand and Power Tools II
1.03	Uses measuring equipment	FC2100	
1.04	Uses personal protective equipment (PPE)	FC1110	Safety
Task 2 – Organizes Work			
2.01	Interprets documentation	FC1150	Estimating and Plans I
		FC2150	Estimating and Plans II
2.02	Determines material requirements and quantities	FC1120	Concrete
2.03	Communicates with others	CM2150	Workplace Communications
2.04	Schedules work procedures	SD1700	Workplace Skills
2.05	Maintains safe work environment	FC1110	Safety I
		FC2110	Safety II
Task 3 – Prepares Site			
3.01	Inspects site	FC2120	Concrete Materials
3.02	Prepares sub-grade	FC2120	Concrete Materials
Task 4 – Uses formwork			
4.01	Constructs concrete form-work	FC2120	Concrete Materials
4.02	Inspects formwork	FC2120	Concrete Materials
4.03	Installs construction, isolation and expansion joints	FC1130	Concrete Placing and Finishing
4.04	Strips forms	FC2120	Concrete Materials
Task 5 – Places Concrete			
5.01	Transports concrete	FC1120	Concrete
5.02	Spreads concrete	FC1130	Concrete Placing and Finishing
5.03	Consolidates concrete		
Task 6 – Levels Concrete			

Plan of Training – Concrete Finisher

NOA Sub-task		Plan of Training Unit	
6.01	Establishes elevation	FC1130	Concrete Placing and Finishing
6.02	Screeds concrete		
6.03	Bull floats concrete		
6.04	Achieves tolerances		
Task 7 – Floats Concrete			
7.01	Floats concrete by hand	FC1130	Concrete Placing and Finishing
7.02	Floats concrete by machine		
Task 8 – Hand Tools Concrete			
8.01	Tools control joints	FC1130	Concrete Placing and Finishing
8.02	Edges perimeter of slab		
8.03	Finishes extruded concrete surfaces		
Task 9 – Trowels Concrete			
9.01	Trowels concrete by machine	FC1130	Concrete Placing and Finishing
9.02	Trowels concrete by hand		
Task 10 – Applies Surface Treatments to Plastic Concrete			
10.01	Broadcasts products on concrete surface	FC2140	Concrete Finishing and Curing
10.02	Applies surface retarder		
10.03	Textures concrete surface		
10.04	Top seeds concrete surface		
10.05	Stamps concrete surface		
Task 11 – Cures Concrete			
11.01	Wet cures concrete	FC1140	Concrete Curing
11.02	Chemical cures concrete		
Task 12 – Protects Concrete			
12.01	Maintains desired temperature	FC2140	Concrete Finishing and Curing
12.02	Places physical protection		
12.03	Saw cuts control joints		
Task 13 – Repairs Concrete			
13.01	Inspects to determine defects	FC2160	Concrete Repair and Grouting
13.02	Removes materials		
13.03	Selects materials and process of repairs		
13.04	Prepares surface for repair		

Plan of Training – Concrete Finisher

NOA Sub-task		Plan of Training Unit	
13.05	Parges vertical surfaces	FC2160	Concrete Repair and Grouting
Task 14 – Cuts and Cores Cured Concrete			
14.01	Identifies hazards	FC1140	Concrete Curing
14.02	Measures depth of cut		
14.03	Selects cutting and coring equipment	FC2100	Hand and Power Tools II
Task 15 – Applies Surface Treatments to Hardened Concrete			
15.01	Prepares surface	FC2140	Concrete Finishing and Curing
15.02	Abrades surface to achieve architectural finish		
15.03	Applies seamless coatings		
15.04	Applies bonded and non-bonded toppings to concrete	FC2130	Concrete Materials
15.05	Applies acid stain	FC2140	Concrete Finishing and Curing
Task 16 - Grouts			
16.01	Selects installation procedure	FC2130 FC2160	Concrete Materials
16.02	Prepares surface for grouting		
16.03	Mixes grout		Concrete Repair and Grouting
16.04	Installs grout		
16.05	Finishes exposed grout surfaces		