
Plan of Training

CARPENTER



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

March 2010

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Approved by:

A handwritten signature in cursive script, appearing to read "Paula Flood".

Chairperson, Provincial Apprenticeship and Certification Board

Date: March 17, 2010

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

Preface

This Apprenticeship Standard is based on the 2010 edition of the National Occupational Analysis for the Carpenter trade.

This document describes the curriculum content for the Carpenter 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.

Contact Information

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

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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

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 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 nd Year	70%	
	3 rd Year	80%	
	4 th Year	90%	
5400 Hours and 4800 Hours	1 st Year	60%	
	2 nd Year	75%	
	3 rd Year	90%	
4000 Hours			(Hairstylist Program) - The apprentice shall be paid no less than the minimum wage for hours worked and a commission agreed upon between the apprentice and the employer.

6.0 Tools

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

7.0 Periodic Examinations and Evaluation

- 7.1 Every apprentice shall submit to such occupational tests and examinations as the PACB shall direct. If after such occupational tests and examinations the apprentice is found to be making unsatisfactory progress, his/her rate of wage shall not be advanced as provided in Section 5 until his/her progress is satisfactory to the Director of Institutional and Industrial Education and his/her date of completion shall be deferred accordingly. Persistent failure to pass required tests shall be a cause for revocation of his/her Memorandum of Understanding.
- 7.2 Upon receipt of reports of accelerated progress of the apprentice, the PACB may shorten the term of apprenticeship and advance the date of completion accordingly.
- 7.3 For each and every course, a formal assessment is required for which 70% is the pass mark. At the discretion of the instructor, the summative mark may be for

completion of a theory examination or a combination of the theory examination and an assigned practical project.

8.0 Granting of Certificates of Apprenticeship

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

9.0 Hours of Work

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

10.0 Copies of the Registration for Apprenticeship

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

11.0 Ratio of Apprentices to Journeypersons

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

12.0 Relationship to a Collective Bargaining Agreement

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

13.0 Amendments to a Plan of Apprenticeship Training

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

14.0 Employment, Re-Employment and Training Requirements

- 14.1 The Plan of Training requires apprentices to regularly attend their place of employment.
- 14.2 The Plan of Training requires apprentices to regularly attend training programs for that occupation as prescribed by the PACB.
- 14.3 Failure to comply with Sections 14.1 and/or 14.2 will result in cancellation of the Memorandum of Understanding. Apprentices may have their MOUs reinstated by the PACB but would be subject to a commitment to complete the entire program as outlined in the General Conditions of Apprenticeship. An apprentice will be required to pay a reinstatement fee. Permanent cancellation in the said occupation is the result of non-compliance.
- 14.4 Cancellation of the Memorandum of Understanding to challenge journey person 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 7200 hours.

OR

A total of 9000 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 journeyman.
- obtains the required hand tools as specified by the PACB for each period of training of the apprenticeship program.

The Employer:

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

- ensures work experiences of the apprentice are documented.

The Training Institution:

provides a high quality learning environment.

provides the necessary student support services that will enhance an apprentice's ability to be successful.

participates with other stakeholders in the continual updating of programs.

The Institutional and Industrial Education Division:

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

The Provincial Apprenticeship and Certification Board:

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

D. Program Structure

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

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

Entry Level Courses - Block 1			
NL Course No.	Course Name	Hours	Pre-Requisite
AJ1160	Blueprint Reading	45	
AJ1170	Residential Estimating	30	AJ1211, AJ1231, AJ1310, AJ1410, AJ1501, AJ1601
AJ1111	Carpentry Fundamentals	74	
AJ1201	Layout and Footings	80	AJ1111
AJ1211	Wall Forms	80	AJ1201
AJ1221	Floor and Wall Framing	90	AJ1111
AJ1410	Interior Fundamentals	60	AJ1221
AJ1501	Interior Trim	60	AJ1111
AJ1310	Roof Fundamentals	80	AJ1221
AJ1231	Exterior Finish	60	AJ1111
AJ1601	Stair Fundamentals	60	AJ1111
AJ2430	Scaffolding	45	AJ1111, LA1110
TS1510	Occupational Health & Safety	6	
HE1620	Powerline Hazards	4	
TS1520	WHMIS	6	
TS1530	Standard First Aid	14	
LA1100	Confined Space Awareness	6	

Entry Level Courses - Block 1			
NL Course No.	Course Name	Hours	Pre-Requisite
AJ1760	Chain Saw Safety	4	
LA1110	Fall Protection Awareness	6	
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	
*MA1060	Basic Math	60	
AP1100	Introduction to Apprenticeship	15	
Total Hours		1080	

Required Work Experience

Block 2			
NL Course No.	Course Name	Hours	Pre-Requisite
AJ2340	Advanced Roof Framing	120	Block I
AJ1121	Rigging	30	Block I
AJ2420	Post and Beam	30	Block I
Total Hours		180	

Required Work Experience

Block 3			
NL Course No.	Course Name	Hours	Pre-Requisite
AJ2220	Structural Formwork	90	Block II
AJ2230	Concrete Stair Forms	30	Block II
AJ2100	Advanced Blueprint Reading	60	Block II
Total Hours		180	

Required Work Experience

Block 4			
NL Course No.	Course Name	Hours	Pre-Requisite
AJ2600	Interior Finish Stairs	60	Block III
AJ2501	Cabinets and Shelving	60	Block III
AJ2800	Renovations	120	Block III
Total Hours		240	

Total Course Credit Hours	1680
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***A student who can meet the Mathematics requirement through an ACUPLACER® test may be exempted from Mathematics 1060. Please check with your training institution.**

Entry Level – Block 1

AJ1160 **Blueprint Reading**

Description:

This blueprint reading course involves reading basic drawings and diagrams, basic sketching, and interpretation of specifications.

Course Aims:

- To develop the skills and knowledge required to read drawings and sketch views

Prerequisites: None

Course Duration: 45hrs

Course Objectives (Knowledge):

1. Identify the alphabet of lines.
2. Identify the basic drawing symbols.
3. Explain the rules of dimensioning.
4. Describe metric, architectural and civil scales.
5. Describe different view orientations.
6. Describe obliques, isometrics and perspectives.
7. Describe the six principle views.
8. Describe the purpose and types of sectional views.
9. Explain conventions associated with sectional views such as symbols, cutting plane lines, broken-out lines, etc.
10. Identify standard drawing symbols used on basic electrical, mechanical and plumbing drawings.
11. Explain the use of graphs.

Major Tasks / Subtasks (Skills):

1. Sketch geometric shapes and lines.
 - i. draw lines to scale
 - ii. scale lines
 - iii. divide lines into equal parts
 - iv. bisect lines
 - v. sketch angles
 - vi. bisect angles
 - vii. sketch concave and convex curves
 - viii. sketch circles, arcs, tangents, ellipses, polygons, etc.

2. Sketch orthographic projections.
 - i. visualize object
 - ii. select views
 - iii. layout sketch
 - iv. sketch projection
 - v. dimension sketch
 - vi. make notations

3. Sketch sectional views.
 - i. locate section
 - ii. select type of view
 - iii. determine scale
 - iv. sketch view
 - v. dimension sketch
 - vi. make notations

4. Sketch primary auxiliary views.
 - i. visualize the view
 - ii. layout the sketch
 - iii. sketch view
 - iv. dimension sketch
 - v. make notations

5. Interpret specifications.

- i. interpret manufacturing specifications
- ii. identify tolerance specifications
- iii. interpret specifications (company standards books)
- iv. interpret schedules
 - door and window schedules
 - interior finish schedules
- v. contract documents (residential)

6. Interpret mechanical drawings.

- i. interpret and apply required information from mechanical drawings

7. Interpret electrical drawings.

- i. interpret and apply required information from electrical drawings

8. Read architectural and structural drawings.

- i. read plot plan, foundation plans, floor plans, details, elevations and sections

AJ1170 Residential Estimating

Description:

This course provides information and prescribes practical exercises to develop knowledge and skills to read and interpret residential blueprint drawings and perform quantity takeoffs.

Course Aims:

1. To interpret residential blueprints.
2. To perform quantity takeoffs.

Prerequisites: AJ1211, AJ1231, AJ1310, AJ1410, AJ1501, AJ1601

Course Duration: 30hrs

Course Objectives (Knowledge):

1. Interpret plans.
2. Calculate material quantities.

Major Tasks / Subtasks (Skills):

1. Interpret residential plans.
 - i. plot plans
 - ii. foundation plans
 - iii. floor plans
 - iv. elevations
 - v. sections
 - vi. details
 - vii. schedules
 - viii. mechanical
 - ix. electrical
2. Perform quantity takeoffs.
 - i. Foundations
 - ii. Framing

- iii. exterior finishes
- iv. interior finishes

AJ1111 Carpentry Fundamentals

Description:

This course in carpentry fundamentals requires the use of basic tools and equipment, and suitable facilities. It involves reading specifications and drawings, selecting materials, layout, building practices and clean up. It includes information on constructing wood joints, and building equipment such as sawhorses, miter boxes, door jack, and oilstone cases.

Course Aims:

1. To develop the skills and knowledge required for construction with respect to various tools and materials.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: None

Course Duration: 74hrs

Course Objectives (Knowledge):

1. Describe types of construction tools and equipment.
2. Explain general workplace safety regulations.
3. Describe different types of building materials and fasteners.

Major Tasks / Subtasks (Skills):

1. Use and maintain hand tools.
 - i. measuring tools
 - ii. marking and layout tools
 - iii. aligning and squaring tools
 - iv. edge cutting tools
 - v. tooth cutting tools

- vi. scraping tools
 - vii. boring and drilling tools
 - viii. assembly tools
 - ix. dismantling tools
 - x. clamping tools
2. Uses and maintain portable power tools.
- i. portable saws
 - ii. portable planing and shaping tools
 - iii. portable drilling and fastening tools
 - iv. plate joiner
 - v. portable abrading tools
 - vi. cordless power tools
 - vii. pneumatic power tools
 - viii. gas-powered tools
 - ix. explosive actuated tools
3. Use and maintain stationary power tools.
- i. stationary sawing tools
 - ii. stationary sanding and abrading tools
 - iii. stationary surfacing machines
 - iv. stationary drilling and boring tools
 - v. stationary grinding and sharpening tools
 - vi. stationary shaper and router table
 - vii. wood lathe
 - viii. mortiser
4. Introduction to identifying and selecting building materials.
- i. concrete
 - ii. wood
 - iii. masonry
 - iv. metal
 - v. engineered wood
 - vi. panels
 - vii. plastic
 - viii. glass
 - ix. ceramic
 - x. fiberglass
 - xi. gypsum
 - xii. polystyrene

5. Introduction to identifying and selecting fasteners.
 - i. screws
 - ii. nails
 - iii. bolts
 - iv. staples
 - v. embeds
 - vi. anchors
 - vii. rivets
 - viii. adhesives
 - ix. gang plate
 - x. joist hangers

6. Build equipment used on job sites, using hand tools such as:
 - i. carpenters horse/saw horse
 - ii. miter box
 - iii. door jack
 - iv. oil stone case

AJ1201 Layout and Footings

Description:

This course in site preparation and formwork requires the use of tools and equipment and materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints, layout, erecting batterboards, installing footing forms and cleaning up. It includes information on plot plans, foundation plans, layout and construction techniques.

Prerequisites: AJ1111

Course Duration: 80hrs

Course Aims:

1. To develop the skills and knowledge required for layout and footing construction with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Course Objectives (Knowledge):

1. Describe types of batterboards and layout techniques.
2. Explain footing form construction techniques.
3. Identify concrete placing equipment.
4. Calculate volume of concrete S.I./Imperial.

Major Tasks / Subtasks (Skills):

1. Site Preparation.
 - i. explain the procedure of excavating techniques (digging/backfilling)
 - ii. determine site conditions and specify any special construction considerations (subterranean, water problems, shoring and bracing requirements, depth of frost, pumping requirements, building line

- setbacks, servicing requirements (water and sewer), top of concrete elevations, size of the footings, etcetera
 - iii. build and install temporary safety or environmental protection (hoarding and guardrails)
 - iv. plan storage of and access to building materials and equipment
 - v. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etc.
2. Layout and erect batterboards and building lines.
- i. locate property lines
 - ii. establish building lines
 - grid lines
 - iii. erect batterboards
 - iv. explain requirements of excavation
 - v. read architectural and structural drawings
 - read plot plan
 - read foundation plans
3. Use survey instruments.
- i. knowledge of basic survey terminology
 - ii. set up, adjust, and use builder's and laser levels
 - iii. determine instrument accuracy
 - iv. establish grades using straight edge and level, builder's level, and water level
4. Construct and install footing forms.
- i. determine footing size
 - pier footing
 - pre-fabricated cylindrical form
 - pre-engineered footing forms
 - ii. align and brace footing forms
 - iii. build footing forms as detailed on footing schedule or structural drawings
 - iv. construct independent tapered forms
 - v. construct offset footing forms
 - vi. construct continuous footing forms
 - vii. construct "t" type footing forms
 - viii. construct stepped footing forms
 - ix. install blockouts, keyways, template for dowels, anchor bolts and rebar

- x. strip footing forms
- xi. find and interpret specific requirements in the national building code
- xii. calculate volume of concrete S.I./Imperial

AJ1211 Wall Forms

Description:

This course in wall forms requires the use of basic tools and equipment, materials and supplies, a surveyor's level and suitable facilities. It involves interpreting specifications and blueprints, layout, constructing foundation walls, installing access for pouring concrete, stripping forms, foundation drainage and damp proofing and cleaning up. It includes information on layout techniques, types of wall forms and construction techniques.

Course Aims:

1. To develop the skills and knowledge required for constructing wall forms with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for conservation and environmental issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: AJ1201

Course Duration: 80hrs

Course Objectives (Knowledge):

1. Describe types and variations of wall forms
2. Explain construction techniques for building and stripping wall forms
3. Explain foundation drainage and various dampproofing techniques

Major Tasks / Subtasks (Skills):

1. Construct and install wall forms.
 - i. construct or assemble forms for concrete in wood and ICF
 - ii. describe other concrete forms such as steel, fiberglass, gang, one-sided, expanded polystyrene (EPS), tilt up, slip forms
 - iii. establish and layout walls and openings
 - iv. brace and align wall forms
 - v. establish the specified elevation of concrete on the forms
 - vi. construct beam pockets, sleeves and chases
 - vii. fur out and brace window and door frames
 - viii. install embedded sills
 - ix. strip wall forms
 - x. describe concrete curing methods and techniques
 - curing times
 - releasing agents
 - admixtures
 - xi. material estimation
 - concrete and form material
 - xii. describe types of foundation and elevations (slab-on-grade, knee wall)
2. Install rough bucks and frames in masonry / concrete.
 - i. construct and install wooden bucks, bulkheads, and cast-in-place windows
 - ii. set metal door / window frames for masonry
 - iii. install miscellaneous inserts, block-outs, rustications, frames and rough bucks, anchor bolts, reinforcement and construction joints
3. Build ramps, runways, chutes and splashboards.
 - i. construct runways
 - ii. construct ramps
 - iii. construct splashboards
 - iv. construct concrete chutes
4. Preserved wood foundation wall [Theory].
5. Interpret mechanical drawings.
 - i. interpret and apply required information from mechanical drawings
6. Interpret electrical drawings.

- i. interpret and apply required information from electrical drawings
7. Read architectural and structural drawings.
 - i. read foundation plans, floor plans, details, section views and elevation views
 - ii. read and interpret specifications
8. Use codes, regulations and standards.
 - i. find and interpret specific requirements in the national building code
 - ii. find and interpret specific requirements in the national energy code
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera
9. Describe foundation drainage and dampproofing [Theory].
 - i. foundation drainage (storm sewer, dry wells, sump pumps)
 - ii. dampproofing materials
 - iii. waterproofing materials
 - iv. surface grading

AJ1221 Floor and Wall Framing

Description:

This course in framing requires the use of tools and equipment, materials and supplies and suitable facilities. It includes interpreting information on plans, types of beams and columns, floors, walls, partitions, types of sheathing and construction techniques.

Course Aims:

1. To develop the skills and knowledge required for framing walls and floors with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: AJ1111

Course Duration: 90hrs

Course Objectives (Knowledge):

1. Describe types of beams and columns.
2. Describe types of floors.
3. Describe types of walls and partitions.
4. Explain construction techniques for columns, beams, floors, and walls / partitions.
5. Identify new types of construction materials.

Major Tasks / Subtasks (Skills):

1. Set sills.
 - i. mark out anchor bolt locations on sill stock
 - ii. level sills
 - iii. check foundations for trueness
 - iv. select suitable sill stock
 - v. install sill material, gaskets or sill sealers using anchor bolts

2. Construct and install beams.
 - i. plan end joint locations in built-up wood beams
 - ii. pre-engineered wood beams (LVL, glu-lam)
 - iii. steel beams

3. Install columns.
 - i. locate columns on their base
 - ii. build columns
 - iii. construct temporary posting for beams
 - iv. install adjustable steel columns

4. Prepare and install conventional floor framing.
 - i. identify various types of floor framing systems and describe the advantages and disadvantages of various materials (balloon framing, platform framing, post and beam)
 - ii. estimate material needed for a wood floor system
 - iii. define live and dead loads and state the important load considerations for floor framing
 - iv. layout and frame floor framing features (stairwells, cantilevers, sunken and drop floors)
 - v. notch and drill floor framing members while maintaining floor strength
 - vi. frame joists to steel beams and special engineered wood beams
 - vii. square and level floor framing
 - viii. calculate and cut bridging
 - ix. install bridging, strapping, shims and ribbon strip
 - x. install subfloor over concrete
 - xi. exercise material conservation

5. Prepare and install pre-engineered floor framing.
 - i. identify various types of floor framing systems and describe the advantages and disadvantages of various materials (wood-I joist, floor trusses)
 - ii. layout and frame floor framing features (stairwells, cantilevers, sunken and drop floors)
 - iii. notch and drill floor framing members while maintaining floor strength and following manufacturer's specifications
 - iv. frame joists to steel beams and special engineered wood beams
 - v. square and level floor framing
 - vi. install lateral and vertical bracings such as strong back, blocking, and backing according to manufacturer's specifications

- vii. install engineered components such as hangers and fasteners in accordance with manufacturer's specifications
6. Install floor sheathing.
- i. identify types of floor sheathing and explain the selection
 - ii. choose floor fasteners and adhesives to satisfy the fastening requirements
 - iii. lay out and install floor sheathing
7. Frame exterior walls.
- i. list and describe types of wall framing
 - ii. state the important loading conditions to be considered when framing walls
 - iii. notch and drill wall framing members while maintaining strength
 - iv. determine and layout location of walls
 - v. select materials for wall framing
 - vi. layout and assemble framing members
 - vii. calculate stud lengths
 - viii. install blocking, nailers, furring, firestops, etc.
 - ix. determine rough opening sizes for windows and doors
 - x. determine size of lintels
 - xi. install let-in bracing
 - xii. assemble and raise wall frames - plumb and square
 - xiii. estimate wall framing materials
 - xiv. exercise material conservation and energy efficiency
8. Install wall sheathing.
- i. identify types of wall sheathing materials
 - ii. select wall fasteners, adhesives to satisfy fastening requirements
 - iii. lay out wall sheathing
 - iv. install wall sheathing
 - v. exercise material conservation
9. Frame bearing and non-bearing partitions.
- i. establish size of framing material
 - ii. build partitions using wood
 - iii. build partitions using steel studs
 - iv. exercise material conservation

10. Install ceiling strapping.

11. Read architectural and structural drawings.

- i. elevations, details, sections
- ii. floor plans
- iii. foundation plans
- iv. engineered drawings
- v. schedules

12. Use codes, regulations and standards.

- i. find and interpret specific requirements in the National Building Code
- ii. find and interpret specific requirements in the National Energy Code
- iii. find and interpret specific requirements in the Buildings Accessibility Act and Regulations
- iv. find and interpret specific requirements in the Canadian Wood Council Span Book
- v. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera

AJ1410 Interior Fundamentals

Description:

This course in interior fundamentals requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints, layout, installation of interior wall and ceiling components, and clean up.

Course Aims:

1. To develop the skills and knowledge required for interior wall finishes and ceiling installation with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: AJ1221

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Describe types of drywall systems.
2. Explain interior wall and ceiling components.
3. Insulation and vapour barrier principles.

Major Tasks / Subtasks (Skills):

1. Apply gypsum drywall systems.
 - i. identify and select gypsum wallboard accessories and products
 - ii. use fasteners and adhesives
 - iii. install gypsum sheets on walls and ceilings
 - iv. describe demountable wall systems [theory]
 - v. estimate materials
2. Apply decorative panels.

- i. plan and install paneling
 - ii. install architectural paneling and millwork (i.e. wainscoting, slat wall, solid wood finishes)
 - iii. estimate materials
3. Apply special types of interior wall coverings [Theory].
 - i. apply tile boards with adhesive and mouldings
 - ii. apply plastic laminates
4. Install furring and frame drop ceilings and bulkheads.
 - i. identify various uses for dropped ceilings (architectural features, cabinet projections, concealing ducts)
 - ii. plan and install frame work for drop ceilings
 - iii. use leveling instruments to establish elevation
 - iv. estimate materials
 - v. fire blocking and fire separation [theory]
5. Install suspended ceiling.
 - i. layout for ceiling pattern
 - ii. establish reference lines
 - iii. install components of a suspended ceiling
 - iv. estimate materials
6. Install acoustical materials.
 - i. install acoustical ceiling tile
 - ii. install fiberglass batts or blankets in staggered stud partitions
 - iii. install resilient channels on walls and ceilings
 - iv. install acoustical sealants
 - v. estimate materials
7. Install insulation and vapour barrier.
 - i. install glass fiber and rigid thermal insulation in frame walls
 - ii. install glass fiber thermal insulation in ceiling spaces
 - iii. install vapour barriers on walls and ceilings
 - iv. provide adequate ventilation of attic and roof spaces
 - v. estimate materials
 - vi. explain different types of insulation (blown in, expansion, rigid, fiberglass)
 - vii. explain building science principals (air movement, heat transfer, vapour flow)

- viii. explain mechanical ventilation (dryer, bathroom vent, range hood, air exchanger)
8. Use codes, regulations and standards.
- i. find and interpret specific requirements in the National Building Code
 - ii. find and interpret specific requirements in the National Energy Code
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera
9. Read architectural drawings.
- i. specifications, sections, elevations
 - ii. reflected ceiling plan

AJ1501 Interior Trim

Description:

This course in interior trim requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpretation of specifications, blueprints and layout. It also involves the installation of interior doors, windows and trim.

Course Aims:

1. To develop the skills and knowledge required for installing interior trim with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: AJ1111

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Describe types of interior windows, doors and trim.
2. Explain installation techniques for interior windows, doors and trim.
3. Identify special accessibility considerations and equipment (barrier-free).
4. Explain types and uses of finish nailers and associated equipment.

Major Tasks / Subtasks (Skills):

1. Install underlayment and strip flooring.
 - i. prepare for laying finish floors
 - ii. estimate amount of materials needed for finish floor and underlay
 - iii. install underlay
 - iv. lay strip flooring
 - v. install laminate flooring
2. Specialized flooring systems [Theory].

- i. explain installation procedures for access flooring
 - ii. explain installation procedures for bowling alleys
 - iii. explain installation procedures for gymnasiums
 - iv. explain installation procedures for ceramic tiles
3. Install common interior door and window frames.
- i. read door & window schedules
 - ii. determine doors & windows required
 - iii. determine swing of doors
 - iv. install frames
4. Installs doors.
- i. describe types of doors (panel, flush, pocket, bi-fold, french, attic hatch, access hatches, etcetera)
 - ii. describe types of hardware (hinges, closures, lock sets, panic hardware, dead bolts)
 - iii. layout and install door and hardware (chisel, router, jigs)
 - iv. install metal jambs and pre-hung doors
 - v. install stops (floor, baseboard, jamb)
 - vi. test and adjust doors
5. Install interior trim.
- i. cut rabbet and mitre joints
 - ii. cope mouldings
 - iii. return mouldings on themselves
 - iv. install mouldings (base, crown, chair rail) using finish nailer
 - v. trim windows and doors (casing and furring) using finish nailer
 - vi. install closet shelving and closet rods
 - vii. scribe materials
 - viii. estimate materials
6. Use codes, regulations and standards.
- i. find and interpret specific requirements in the National Building Code
 - ii. find and interpret specific requirements in the Buildings Accessibility Act and Regulations
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera

7. Read architectural drawings.
 - i. specifications, schedules, details, elevations

AJ1310 Roof Fundamentals

Description:

This course in roof fundamentals requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints, building codes, layout, basic roof framing, installation of common coverings, and clean up.

Course Aims:

1. To develop the skills and knowledge required for basic roof framing with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: AJ1221

Course Duration: 80hrs

Course Objectives (Knowledge):

1. Describe roof types.
2. Describe roof coverings.
3. Explain construction and installation techniques for different types of frames and coverings.

Major Tasks / Subtasks (Skills):

1. Describe and install trussed rafters.
 - i. identify and describe different roof styles
 - ii. identify types of trusses to be used
 - iii. identify and describe roof truss members (purlins, webs, gussets, gang plates, bracing, hardware and chords)
 - iv. interpret basic engineered truss plans / drawings (i.e.: gable, hip)
 - v. install trussed rafters

2. Frame and erect gable and shed roofs.
 - i. layout and calculate for common rafters
 - ii. layout ceiling joist and rafter locations
 - iii. layout a common rafter pattern
 - iv. install common ceiling joists and rafters
 - v. describe how to frame roof openings
 - vi. layout and cut gable studs
 - vii. layout and frame gable overhang
 - viii. layout shed rafter cut for dormers
 - ix. prepare the roof for sheathing
 - x. layout and cut collar ties
 - xi. layout rafter locations on wall plates and ridge board
 - xii. estimate roof frame materials

3. Install roof sheathing.
 - i. identify and describe types of roof sheathing
 - ii. identify and describe roof fasteners, adhesives and fastening requirements
 - iii. select roof sheathing materials and fasteners.
 - iv. layout and install roof sheathing.
 - v. estimate sheathing materials

4. Build cornices.
 - i. draw a full size view of a cornice
 - ii. align rafter tails
 - iii. install lookouts and rough fascia
 - iv. install fascia board on eaves and rakes
 - v. mitre fascia and frieze boards
 - vi. describe installation of gutters and downspouts

5. Install common roof coverings.
 - i. check and repair roof sheathing
 - ii. demonstrate safe use of roof brackets
 - iii. plan installation of asphalt / fiberglass roof shingles
 - iv. install underlayment and eave protection
 - v. install valley flashings and intersecting walls
 - vi. apply asphalt/ fiberglass shingles
 - vii. describe low slope applications of asphalt/ fiberglass shingles
 - viii. flash roof penetrations (vent stacks, roof vents, flash chimneys)
 - ix. install ridge cap and vent
 - x. identify and select fasteners

- xii. estimate materials
 - xiii. identify and describe roof venting requirements
6. Use codes, regulations and standards.
- i. find and interpret specific requirements in the National Building Code
 - ii. find and interpret specific requirements in the National Energy Code
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera
7. Read architectural and structural drawings.
- i. elevations, details, specifications, sections
 - ii. floor plans
 - iii. engineered drawings

AJ1231 Exterior Finish

Description:

This course in exterior finish requires the use of tools and equipment, materials and supplies and suitable facilities. It includes information related to the installation of exterior frames, finishes and trim. Also information incorporated from blueprint sections, elevations and details.

Course Aims:

1. To develop the skills and knowledge required for the installation of exterior finishes with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: AJ1111

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Describe types of exterior framing.
2. Describe types of exterior wall trim and finishes.
3. Describe construction techniques for installing exterior framing and trim.
4. Describe types of exterior windows and doors.

Major Tasks / Subtasks (Skills):

1. Exterior doors and windows.
 - i. read door and window schedules
 - ii. determine the size and type of windows required
 - iii. determine swing of doors
 - iv. select doors and windows
 - v. check rough stud opening sizes (RSO)
 - vi. install building paper around exterior openings

- vii. install exterior windows and doors
 - viii. install backing/blocking for security purposes
 - ix. insulate cavities around frames
 - x. read hardware schedule/list
 - xi. install and adjust hardware
2. Install wood sidings.
- i. install building paper and wood furring to wall sheathing
 - ii. apply built-up corner boards
 - iii. install exterior wall flashing
 - iv. apply sidings to achieve a watertight finish
 - v. use story poles
 - vi. alternate and lap corners of siding
 - vii. install exterior trim (window and door moulding trim, drip caps and brick moulding, corner boards, frieze boards, water table, barge boards)
 - viii. mitre corners of clapboards
 - ix. estimate materials
3. Vinyl siding.
- i. cut vinyl siding
 - ii. fasten vinyl siding
 - iii. install siding accessories / trim
 - iv. wall preparations
 - v. install soffit and fascia
 - vi. estimate materials
4. Other special cladding [Theory].
- i. metal
 - ii. composite
 - iii. cementitious
 - iv. stucco
 - v. brick veneer
 - vi. exterior finish insulation systems (EFIS)
5. Read architectural and structural drawings.
- i. elevations, details, sections
 - ii. schedules
6. Use codes, regulations and standards.
- i. find and interpret specific requirements in the National Building Code

- ii. find and interpret specific requirements in the National Energy Code
- iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera

AJ1601 Stair Fundamentals

Description:

This course in stair fundamentals requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpretation of specifications and blueprints, calculations, layout, construction and installation of basic stairs, and clean up.

Course Aims:

1. To develop the skills and knowledge required for constructing basic stairs with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: AJ1111

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Stair calculations.
2. Safety requirements.
3. Construction techniques for basic stairs.

Major Tasks / Subtasks (Skills):

1. Build basement stairs and exterior steps.
 - i. identify various stair designs
 - ii. determine stairway components and materials
 - iii. calculate unit rise and unit run of stairs
 - iv. layout and install stair landings (interior and exterior)
 - v. calculate, layout and cut stringers
 - vi. install stringers, treads, risers and hand rails

- vii. estimate materials
-
- 2. Accessibility ramp requirements [Theory].
 - i. describe and explain national building code requirements
 - ii. types of ramps (wood, concrete)
-
- 3. Use codes, regulations and standards.
 - i. find and interpret specific requirements in the national building code
 - ii. find and interpret specific requirements in the buildings accessibility act and regulations
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera
-
- 4. Read architectural drawings.
 - i. specifications, schedules, details, elevations

AJ2430 Scaffolding

Description:

This course in scaffolding requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications, construction of wood scaffolds, and clean up. It includes information on the assembly of metal scaffolds.

Course Aims:

1. To develop the skills and knowledge required for erecting scaffolds with respect to various codes, regulations and specifications.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: AJ1111, LA1110

Course Duration: 45hrs

Course Objectives (Knowledge):

1. Describe construction techniques for wood scaffolds.
2. Describe safety requirements for erecting scaffolds.
3. Describe the different types of scaffolds.
4. Describe the different types of ladders.
5. Describe power scaffolding.

Major Tasks / Subtasks (Skills):

1. Build common wood scaffolds.
 - i. build wood scaffolds according to safety regulations and Occupational Health and Safety
 - ii. dismantle wood scaffolds
 - iii. design scaffolds for economy of time and material

2. Use steel scaffolding.
 - i. inspect scaffolding before using
 - ii. erect and dismantle standard steel scaffolds according to safety regulations and Occupational Health and Safety
 - iii. erect, dismantle and maintain rolling scaffolds
 - iv. use pump jack scaffolds
 - v. use roof brackets

3. Introduction to rigging.
 - i. demonstrate use of knots
 - ii. list the different kinds of knots
 - iii. describe the different types/ uses of ropes

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 Duration: 6hrs

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 and 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

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- 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

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- 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.

HE1620 Powerline Hazards

Description:

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

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

Pre-requisites: None

Course Duration: 4hrs

Objectives:

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

Major Tasks:

Completion of the Participant's Workbook from WHSCC.

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 Duration: 6hrs

Course Outcomes:

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

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

Required Knowledge and Skills:

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

2. Examine hazard identification and ingredient disclosure.
 - i. prohibited, restricted and controlled products
 - ii. classification and the application of WHMIS information requirements
 - iii. responsibilities for classification
 - the supplier
 - the employer
 - the worker - Classification: rules and criteria

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- 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

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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:

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

Course Duration: 14hrs

LA1100 Confined Space Awareness

Description:

This course is designed to give participants the knowledge to properly prepare themselves to work in confined spaces.

Aims:

- properly prepare a confined space for entry
- enter a confined space safely
- perform their duties as an attendant
- deal with an emergency

Pre requisites: None

Course Duration: 6 hrs

Theory:

1. Recognize confined space hazards.
 - i. define a confined space
 - ii. identify types of hazards in confined spaces
2. Identify proper controls for confined space entries.
 - i. list steps to protect yourself from confined space hazards
 - ii. define an entry permit
 - iii. list information included on a confined space entry permit
 - iv. explain what action must be taken if a permit expires before work is completed
3. Preparing for confined space entry.
 - i. state the first step in entry preparation
 - ii. list examples of proper entry preparation
 - iii. list types of personal protective equipment used in confined spaces
4. Determine testing techniques for confined spaces.

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- i. list the necessary steps of air testing
 - ii. state the correct order for testing gases
5. Identify confined space entry procedures.
- i. identify the attendants responsibilities
 - ii. identify the area where the attendant should be stationed
 - iii. identify the entrants responsibilities
6. Explain confined space rescue techniques.
- i. list three types of confined space rescues
 - ii. explain non-entry rescue
 - iii. list the requirements of an on-site rescue team

AJ1760 Chain Saw Safety

Description:

This course provides information and prescribes practical exercises to develop knowledge and skills to safely operate a chain saw.

Course Aims:

1. To identify types of chain saws.
2. To safely operate a chain saw.

Prerequisites: None

Course Duration: 4hrs

Course Objectives (Knowledge):

1. Identify the types of chain saws.
2. Describe the safe operation, maintenance and storage of chain saws.

Major Tasks / Subtasks (Skills):

1. Identify and select required safety equipment.
2. Demonstrate safe operation of a chain saw.
3. Demonstrate safe maintenance of a chain saw.
4. Demonstrate safe storage of a chain saw.

LA1110 Fall Protection Awareness

Description:

This course is designed to give participants the required knowledge for the safe and efficient use and care of fall protection equipment so that they may work safely when **“off the ground”** or in areas where fall hazards exist.

Aims:

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

- identify various types of fall protection and their components
- explain the proper use of fall protection equipment and personal fall arrest systems
- identify fall hazards in the workplace and take corrective measures to eliminate them through the selection of appropriate fall protection systems

Pre requisites: None

Course Duration: 6hrs

Theory:

1. Define the term fall protection.
2. Explain why fall protection is important in the workplace.
3. Determine when to use fall protection.
4. List the A, B, C, D's of a complete fall protection system.
5. Describe the basic function of a travel restrict system.
 - i. permanent and temporary guard rails
 - ii. personal travel restrict systems

6. Describe the basic function of a fall arrest system.
 - i. identify the components of a personal fall arrest system
 - full body harness
 - shock absorbers
 - lanyards
 - lifelines
 - vertical
 - horizontal
 - rope grabs
 - anchors
 - ii. explain how to put on a full body harness
7. Describe the basic function of a work positioning system.
 - i. list the components of a personal work positioning system
8. Explain when inspections on equipment must be conducted and what action must be taken if defects or damage is discovered.
 - i. list components of equipment that require inspection

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

Course Duration: 45hrs

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 and 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
 - vii. memos
 - viii. 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

Course Duration: 30hrs

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’s wants and needs.

- i. identify customer needs
 - ii. explain the difference between customer wants and needs
 - iii. identify ways to ensure repeat business
3. Demonstrate an understanding of the importance of having a positive attitude.
 - i. identify & discuss the characteristics of a positive attitude
 - ii. explain why it is important to have a positive attitude
 - iii. explain how a positive attitude can improve a customer's satisfaction
 - iv. define perception and explain how perception can alter us and customers
 - v. describe methods of dealing with perception
4. Communicating effectively with customers.
 - i. describe the main elements in the communication process
 - ii. identify some barriers to effective communication
 - iii. explain why body language is important
 - iv. define active listening and state why it is important
 - v. identify and discuss the steps of the listening process
 - vi. identify and discuss questioning techniques
5. Demonstrate using the telephone effectively.
 - i. explain why telephone skills are important
 - ii. describe the qualities of a professional telephone interaction
6. Demonstrate an understanding of the importance of asserting oneself.
 - i. define assertiveness
 - ii. discuss assertive techniques
 - iii. explain the use of assertiveness when dealing with multiple customers
7. Demonstrate techniques for interacting with challenging customers in addressing complaints and resolving conflict.
 - i. examine and discuss ways to control feelings
 - ii. examine and discuss ways to interact with an upset customer
 - iii. examine and discuss ways to resolve conflict/customer criticism
 - iv. examine and 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

Course Duration: 30hrs

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)
 - iii. explain the purpose of the quality assurance manual
 - iv. 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

Course Duration: 30hrs

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 develop 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. pass words
 - 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

Course Duration: 30hrs

Objectives and 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 & 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

Course Duration: 15hrs

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

Course Duration: 15hrs

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

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 Duration: 60hrs

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.

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

Course Duration: 15hrs

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
 - Department of Education
 - Provincial Apprenticeship and Certification Board
3. Explore the roles and responsibilities of those involved in the apprenticeship process.
 - i. apprentice

- ii. employer/journeyperson
 - iii. Industrial Training Division
 - explain when and where to take the in-class portion of advance training
 - discuss class calls
 - iv. Training Institutions
 - various delivery methods
 - v. Provincial Apprenticeship and Certification Board
4. List and explain the steps in the apprenticeship process.
- i. explain the registration process
 - ii. describe apprenticeship as an agreement between employee, employer and Provincial government
 - iii. review a Memorandum of Understanding
 - iv. legal document
 - v. review an application of apprenticeship
 - original high school certificate or equivalent
 - original transcript from the applicant's 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 the Program Development Officer
 - viii. differentiate between provincial and interprovincial exams
5. Describe the training and education requirements.
- i. discuss the factors affecting on-the-job and in class portions of your training
 - ii. define in school and on the job training
 - review a Plan of Training
 - identify the percentage of on-the-job and in class training time

- current labour market implications on completing an apprenticeship program
6. Explain Plans of Training.
 - i. identify what is included in the Plan of Training
 - entrance requirements
 - duration of in-school and on-the-job training
 - course content
 - entry level or advanced level
 - ii. explain how a Journeyperson Certificate is achieved
 - discuss Certificate of Qualification.
 - discuss Certificate of Apprenticeship.
 - discuss Red Seal endorsement
 7. Discuss the Red Seal Program.
 - i. define designated trade
 - ii. explore the National Occupational Analysis for your trade
 - iii. explain Interprovincial Standards Red Seal Program and how it works
 - labor mobility
 - qualification recognition
 - iv. discuss the range of careers possible in your chosen trade
 8. Explain apprenticeship progression schedule and wage rates.
 - i. review a Record of Occupational Progress (Log Book)
 - ii. hours per program
 - iii. requirements for progression
 - iv. wage rates per year of apprenticeship
 9. Identify the examinations and evaluation process used in Apprenticeship.
 - i. discuss occupational tests and examinations as directed by the Provincial Apprenticeship and Certification Board
 - theory
 - practical
 - ii. explain formal assessment and the pass mark of 70%
 10. Examine some of the financial incentives available to apprentices.
 - i. Employment Insurance (E.I.) Benefits
 - ii. government sponsored student loans
 - iii. apprenticeship incentive Federal and Provincial

- iv. scholarships
11. Continuing training outside the Province of Newfoundland Labrador.
- i. training in other provinces and territories
 - procedure for registration and recognition of hours and skills in other provinces
 - ii. options for dual certification
 - transfer of credits
12. Review and define the following terms:
- i. Apprenticeship Program Accreditation
 - ii. Cancellation of Apprenticeship
 - iii. Certificate of Apprenticeship
 - iv. Certificate of Qualification
 - v. Certification Renewal
 - vi. Criteria for Eligibility
 - vii. Journeyperson
 - viii. Practical Examination
 - ix. Prior Learning
 - x. Record of Occupational Progress (Logbook)
 - xi. Red Seal Certification
 - xii. Registered Apprentice
 - xiii. Theoretical Examination
 - xiv. National Occupational Analysis (NOA)
 - xv. Class Call
 - xvi. Dual certification

Practical:

1. Review the Provincial Apprenticeship web site: www.gov.nl.ca/app
- i. identify the requirements for registering as an apprentice and the registration process
 - ii. explain the steps to complete an apprenticeship program
 - iii. identify who is responsible for tracking and signing-off on trade skills
 - iv. identify the nearest Industrial Training Office to your community
 - v. identify the current incentives available to apprentices

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

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

Block 2

AJ2340 Advanced Roof Framing

Description:

This course in roof framing requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints, layout, installation and construction of hip and intersecting roofs, and clean up.

Course Aims:

1. To develop the skills and knowledge required for hip and intersecting roof framing with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: Block I

Course Duration: 120hrs

Course Objectives (Knowledge):

1. Describe hip roofs.
2. Describe intersecting roof framing construction techniques.
3. Describe polygon roof framing techniques.
4. Describe pre-engineered roof trusses.
5. Describe flat roof construction techniques.

Major Tasks / Subtasks (Skills):

1. Frame hip roofs (stick frame).
 - i. calculate and lay out hip roof rafters
 - ii. construct a hip roof

- iii. install roof sheathing
 - iv. estimate materials
- 2. Frame an intersecting roof of equal pitch (stick frame).
- 3. Frame an intersecting roof of unequal pitch (stick frame).
- 4. Frame an octagon roof (stick frame).
- 5. Pre-engineered roof trusses.
 - i Interpret plans (layout, nailing patterns, hangers, shear plates, bearing length and bracing)
 - ii frame intersecting roof using pre-engineered trusses
 - iii Discuss girder loads on lintels (concentrated verses distributed loads)
- 6. Use codes, regulations and standards.
 - i. find and interpret specific requirements in the National Building Code
 - ii. find and interpret specific requirements in the Canadian Wood Council Span Book
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera
- 7. Read architectural drawings.
 - i. details, elevations, sections

AJ1121 Rigging

Description:

This rigging awareness course requires the use of rigging equipment, block and tackle, and safety equipment. It involves installing, testing and maintaining rigging; and tying knots and splicing rope. It includes information on safety requirements, types of ropes, types of knots and slings.

Course Aims:

1. To develop the skills and knowledge required to install safe rigging

Prerequisites: Block I

Course Duration: 30hrs

Course Objectives (Knowledge):

1. List the Occupational Health and Safety Regulations for rigging.
2. Describe the different types of ropes.
3. List the different kinds of knots.
4. Describe slings.
5. Describe methods of load balancing.
6. Describe the proper procedures and equipment for handling heavy objects.
7. Specify the use of screw jacks versus hydraulic units.

Major Tasks / Subtasks (Skills):

1. Use and maintain rigging equipment.
 - i. recognize and use international hand signals
 - ii. calculate safe working loads
 - iii. interpret occupational health and safety regulations
 - iv. demonstrate the safe and proper use of lifting equipment such as come-alongs, chain falls, jacks, winches, overhead cranes, jacks, skids, cable tuggers, plate grabs, reeved blocks, slings and rope
 - v. demonstrate proper use of knots
 - vi. use lifting attachments such as eye bolts and lifting lugs, beam clamps and crawlers, snatch blocks, spreader bars, shackles and screw jacks
 - vii. transfer loads using lifting equipment
 - viii. use hoisting equipment
 - ix. direct/assist in loading/unloading and placement of materials
 - x. safely distribute materials to work stations to prevent overloading of structural components (i.e: trusses and joists)

2. Identify different types of cranes.

3. Use overhead cranes to conduct a proper lift
 - i. use proper lifting procedures
 - ii. use hoisting and crane signals
 - iii. use plate grab and/or slings

AJ2420 Post and Beam

Description:

This course in post and beam construction requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints, layout, construction and installation, and clean up.

Course Aims:

1. To develop the skills and knowledge required for post and beam construction with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: Block I

Course Duration: 30hrs

Course Objectives (Knowledge):

1. Describe types of post and beam construction.

Major Tasks / Subtasks (Skills):

1. Build and erect post and beam and structural timber framework.
 - i. assemble frame work used in timber construction
 - ii. erect frame work used in timber construction

Block 3

AJ2220 Structural Formwork

Description:

This course in structural formwork requires the use of basic tools and equipment, materials and supplies, leveling instruments and suitable facilities. It involves interpreting specifications and blueprints, layout, constructing and installing structural formwork, and cleaning up. It also includes information on various types of structural formwork.

Course Aims:

1. To develop the skills and knowledge required for structural formwork with respect to engineering requirements and specifications.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: Block II

Course Duration: 90hrs

Course Objectives (Knowledge):

1. Describe tests for concrete and explain their purpose.
2. Describe types of structural formwork.
3. Explain construction techniques for structural formwork.
4. Explain the types of techniques for concrete reinforcements.

Major Tasks / Subtasks (Skills):

1. Build column and pier forms.
 - i. assemble column and pier forms (wood, metal, fiber tube type)
 - ii. install column and pier forms (wood, metal, fiber tube type)
 - iii. layout piers and column
 - iv. align and brace column forms
 - v. establish elevation of pour
 - vi. install miscellaneous inserts and anchor bolts
 - vii. strip forms as required

2. Install slab / beam forms.
 - i. take dimensions from blueprints
 - ii. assemble and install suspended slab/beam
 - iii. lay out and install forms for slabs on-grade sidewalks, driveways, or curbs
 - iv. establish elevation of concrete
 - v. install miscellaneous inserts
 - vi. install anchor bolts
 - vii. strip forms as required

3. Construct concrete joints.
 - i. determine different concrete joints
 - ii. make construction joints (keyways & bulkheads)
 - iii. install water stops
 - iv. construct control joints
 - v. construct expansion joints
 - vi. construct isolation joints

4. Construct auxiliary concrete forms.
 - i. locate and take dimensions from drawings for auxiliary forms
 - ii. assemble standard metal and wood forms or moulds for auxiliary applications
 - iii. install miscellaneous architectural features and finishes (rustication and form liners)
 - iv. install miscellaneous inserts in auxiliary forms
 - v. strip forms as required

5. Precast Concrete [Theory].
 - i. describe the types of precast components

- ii. identify fastening and backing rods
 - iii. describe miscellaneous steel for precast components
 - iv. identify precast concrete members
6. Install reinforcement.
- i. install rebar
 - ii. install wire mesh
 - iii. discuss other types of reinforcement (fiberglass, pre stressing / post tensioning)
7. Design, test and place concrete [Theory].
- i. plan and schedule concreting operations
 - ii. select components for quality concrete mixes
 - iii. discuss concrete testing
 - iv. describe mixing concrete on-site by volume and determine the possible strength (psi)
 - v. trowel and finish concrete surfaces
 - vi. discuss concrete curing techniques
8. Describe shoring and underpinning.
- i. determine location and dimensions of shoring and underpinning from drawings
 - ii. discuss shoring, sheet piling and underpinning to prevent collapse of existing buildings or excavations
 - iii. discuss timber or structural steel needles
 - iv. describe blocking cribwork
 - v. describe the set up of screw and hydraulic jacks
9. Describe the use of piles and installation techniques.
10. Build and install gangforms.
- i. identify various types of form hardware
 - ii. select and install the basic materials used in gangforms
 - iii. strip and disassemble gangforms for re-use
11. Use survey instruments.
- i. knowledge of basic survey terminology
 - ii. set up, adjust, and use builder's and laser levels
 - iii. determine instrument accuracy

- iv. establish grades using straight edge and level, builder's level, and water level

12. Read architectural and structural drawings

- i. read foundation plans, floor plans, details, section views and elevation views
- ii. read and interpret specifications
- iii. estimate materials
 - concrete
 - form material

AJ2230 Concrete Stair Forms

Description:

This course in concrete stair forms requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpretation of specifications and blueprints, calculations, layout, construction and installation of stair forms, and clean up.

Course Aims:

1. To develop the skills and knowledge required for constructing concrete stairs with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: Block II

Course Duration: 30hrs

Course Objectives (Knowledge):

1. Stair calculations.
2. Safety requirements.
3. Construction techniques for concrete stairs.

Major Tasks / Subtasks (Skills):

1. Construct and install stair forms.
 - i. calculate unit rise and unit run of stairs
 - ii. install stair forms between walls
 - iii. build soffit type stair forms
 - iv. slab on grade stair forms
 - v. locate and install miscellaneous inserts in stairs
 - vi. estimate materials

2. Use codes, regulations and standards.
 - i. find and interpret specific requirements in the national building code
 - ii. find and interpret specific requirements in the buildings accessibility act and regulations
 - iii. interpret and comply with national, provincial and municipal codes and regulations (if applicable) - employment, health, environment, security regulations and standards, etcetera

3. Read architectural drawings.
 - i. specifications, schedules, details, elevations

AJ2100 Advanced Blueprint Reading

Description:

This course provides information and prescribes practical exercises to develop knowledge and skills to read and interpret commercial blueprint drawings and perform quantity takeoffs.

Course Aims:

1. To interpret commercial blueprints.
2. To perform quantity takeoffs.

Prerequisites: Block II

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Identify types of plans.
2. Interpret plans.
3. Calculate material quantities.

Major Tasks / Subtasks (Skills):

1. Interpret commercial plans.
 - i. structural / civil
 - ii. architectural
 - iii. mechanical
 - iv. electrical
 - v. specifications
 - vi. as-builts [theory]
2. Perform quantity takeoffs.
 - i. walls
 - ii. ceilings
 - iii. concrete
 - iv. exterior finishes
 - v. interior finishes

Block 4

AJ2600 Interior Finish Stairs

Description:

This course in stair construction requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints, layout, construction and installation of interior finish stairs, and clean up.

Course Aims:

1. To develop the skills and knowledge required for constructing interior finish stairs with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: Block III

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Make calculations associated with geometric stair design geometry.
2. Describe construction techniques for common finish stairs.
3. Describe various types of stair stringers.

Major Tasks / Subtasks (Skills):

1. Build common finish stairs.
 - i. identify and select various balustrade/railing designs

- ii. layout and cut newels, handrails, balusters, railings and skirt boards
- iii. build open type stairs against wall finished members including newel posts, handrails and nosings
- iv. build quarter turn enclosed stairs using winder treads
- v. prepare balustrade to specified finish
- vi. perform calculations for geometrical stairs
- vii. layout circular stairs

AJ2501 Cabinets and Shelving

Description:

This course in cabinets and shelving requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints, layout, construction and installation of cabinets and shelving, and clean up.

Course Aims:

1. To develop the skills and knowledge required for constructing and installing cabinets and shelving with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.

Prerequisites: Block III

Course Duration: 60hrs

Course Objectives (Knowledge):

1. Explain construction and installation techniques for cabinets and shelving.
2. Describe types of cabinets and shelving.
3. Describe the principles of kitchen layout.
4. Describe mantels, display cases, and other custom cabinetry.
5. Explain barrier-free requirements (kitchens, bathrooms).

Major Tasks / Subtasks (Skills):

1. Install shelving.
2. Construct a bookcase.
3. Construct and install cabinets.
 - i. identify cabinet/display case construction methods and designs
 - ii. identify fasteners, adhesives, materials and hardware

- iii. layout upper and lower cabinet frame work
- iv. construct and install drawers
- v. install cabinet framework
- vi. construct doors and install hardware and accessories
- vii. build countertop base and apply laminates [theory]
- viii. install pre-formed counter tops
- ix. layout and cut openings for other trades

4. Describe and explain various wood finish techniques.

AJ2800 Renovations

Description:

This course provides information on how to plan and implement renovations to residential and commercial buildings.

Course Aims:

1. To develop the skills and knowledge required for renovations with respect to various codes and regulations.
2. To exercise safe work practices.
3. To develop an appreciation for environmental conservation issues and concerns.
4. To identify, select, estimate and conserve building materials.
5. To ensure energy efficient building construction.

Prerequisites: Block III

Course Duration: 120hrs

Course Objectives (Knowledge):

1. Identify potential hazardous materials such as rot, mold/mildew, and asbestos.
2. Identify safety concerns (public, worker, occupant, environmental, etc.)
3. Identify existing structural components.
4. Identify existing finishing components (siding, roofing, trims, etc.)
5. Identify building techniques used in renovation (interior and exterior).
6. Identify energy efficient retrofit techniques.

Major Tasks / Subtasks (Skills):

1. Planning renovations.
 - i. site considerations (neighbours, timeframe, property, safety, occupancy, municipal considerations)
 - ii. structural
 - iii. finishing (interior, exterior)
 - iv. electrical

- v. mechanical
 - vi. estimating materials and labour
2. Planning demolition / removal.
- i. site considerations / property protection
 - ii. structural
 - iii. sub-trades
 - iv. finishing (interior, exterior)
 - v. estimating materials and labour
 - vi. hazardous material
 - vii. remove materials to permit reuse
 - viii. disposal of materials
 - ix. safety
3. Planning construction.
- i. materials (selection, use of reclaimed materials, delivery and storage)
 - ii. site considerations
 - iii. structural (new to existing / new construction)
 - iv. sub-trades (electrical, mechanical, engineering, etc)
 - v. finishing (interior, exterior, tie-ins)
 - vi. safety
 - vii. inspections
 - viii. energy efficiency

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:

1. Interpret specifications and blueprints which includes reading basic drawings, sketching and material takeoffs.
2. Prepare site for footing, formwork, layout and erect batterboards, install footing forms.
3. Install foundation wall forms which includes constructing forms, installing accessories, installing access for pouring, stripping and foundation drainage installation.
4. Construct floor and wall framing which includes layout, framing and installing, using various construction techniques.
5. Install exterior finish which includes layout and installation of various types of frames, trims and sidings.
6. Construct roof framing which involves layout and framing of different roof designs using various construction techniques.
7. Install interior walls, ceilings and trim using various construction techniques.
8. Construct various types of stairs which includes calculating, design, layout and installation.

9. Build cabinets and shelving which includes layout, construction and installation, using different construction techniques.

10. Plan and prepare site for renovation, demolition and re-construction.