



**PROVINCIAL PLAN OF TRAINING  
FOR THE  
CABINETMAKER  
OCCUPATION**

July, 2002

## **Preface**

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This Provincial Plan of Training derived from the Atlantic Training Standard is based upon the 2000 edition of the National Occupational Analysis for the Cabinetmaker trade. It was developed through the cooperative efforts of the Atlantic Apprenticeship Council, which consists of both the Atlantic Directors of Apprenticeship and Apprenticeship Board Chairs. This document describes the curriculum content for the Cabinetmaker apprenticeship training program and outlines each of the courses necessary for completion of apprenticeship.

## **Acknowledgments**

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Advisory committees, industry representatives, instructors and apprenticeship staff provided valuable input into the development of this Provincial Plan of Training. Their dedication to quality apprenticeship will benefit institutional training for apprentices in this trade.

# Apprenticeship Plan of Training Evaluation Form

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

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

Overall comments are to be entered on this evaluation form and specific changes are to be entered directly on the document in the relevant area(s). When all feedback has been recorded, return this evaluation form along with the revised Plan of Training to the Apprenticeship Office noted at the bottom of the page.

(PLEASE PRINT)

Trade: Cabinetmaker

Full Name: \_\_\_\_\_

Type of Position: (Trade Practitioner, Instructor, etc.): \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

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

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Return Evaluation Form and Plan of Training to:

*Manager, Industrial Training  
Division of Institutional and Industrial Education  
Department of Youth Services and Post-Secondary Education  
P.O. Box 8700  
St. John's, NF  
A1B 4J6*

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## Program Outcomes

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

Task 1	Plans work activities.
Task 2	Uses hand and portable power tools.
Task 3	Maintains machines and equipment.
Task 4	Builds prototypes.
Task 5	Works on job sites.
Task 6	Machines components using stationary woodworking machines.
Task 7	Machines components using automated equipment.
Task 8	Bends wood and related materials.
Task 9	Laminates wood and related materials.
Task 10	Applies veneers and inlays.
Task 11	Applies laminated materials.
Task 12	Applies solid surfaces.
Task 13	Applies edge treatment.
Task 14	Assembles cabinets.
Task 15	Assembles furniture.
Task 16	Assembles architectural woodword/millwork products.
Task 17	Prepares and applies finishing materials.
Task 18	Restores woodwork.

## Program Structure

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NF Course No.	Atlantic Course No.	Course Name	Suggested Hours	Prerequisites	Page No.
TS-1510		Occupational Health & Safety	6		12
TS-1530		First Aid	14		15
TS-1520		WHMIS	6		16
AK-1130	CAB-0135	Construction Safety	40	TS-1520, TS-1530	19
AK-1100	CAB-0140	Blueprint I - Basic	75		23
AK-1200	CAB-1100	Hand Tools	45	CAB 0135	26
AK-1210	CAB-1105	Fasteners and Adhesives	30	CAB 1100	27
AK-1220	CAB-0145	Materials	45	CAB 0135	29
AK-1230	CAB-1110	Portable Power Tools	45	CAB 1100	34
AK-1240	CAB-1115	Common Stationary Equipment	60	CAB 1110	36
AK-1250	CAB-1120	Joint Fabrication and Assembly	45	CAB 1115	38
AK-1260	CAB-1125	Laminating	45	CAB 1120	40
AK-1270	CAB-1130	Speciality Stationary Equipment	60	CAB 1125	43
AK-1280	CAB-1135	High Production Equipment	75	CAB 1130	44
AK-1290	CAB-1140	Basic Casework	75	CAB 1150, CAB 1130	46
AK-1300	CAB-1145	Wood Finishing	80	CAB 1110	50
AK-2200	CAB-1155	Advanced Casework and Furniture Design	90	CAB 1140, CAB 1170	54
AK-1310	CAB-1160	Stairs	90	CAB 1150	57
AK-1101	CAB-1150	Blueprint II (Intermediate)	40	CAB-0140	62
AK-1320	CAB-1180	Industry Codes and Practices	45	CAB-0135	65
AK-1330	CAB-1190	Installation Procedures	45	CAB 1180, CAB 1140	68
AK-2100	CAB-1170	Blueprint III (Advanced)	40	CAB-1150	70
AK-2101	CAB-1175	Blueprint IV (CAD)	60	CAB-1170	71
CM-2150		Workplace Correspondence	45		74
MR-1220		Customer Service	30		76
SP-2330		Quality Assurance/Quality Control	30		78

<b>NF Course No.</b>	<b>Atlantic Course No.</b>	<b>Course Name</b>	<b>Suggested Hours</b>	<b>Prerequisites</b>	<b>Page No.</b>
MC-1050		Introduction to Computers	30		80
SD-1700		Workplace Skills	30		85
SD-1710		Job Search Techniques	15		87
SD-1720		Entrepreneurial Awareness	15		88

## **CONDITIONS GOVERNING APPRENTICESHIP TRAINING**

### **1.0 GENERAL**

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

### **2.0 ENTRANCE REQUIREMENTS**

#### **2.1 Entry into the occupation as an apprentice requires:**

The completion of designated first year courses specific to the occupation  
OR

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

OR

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

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

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

**2.4** A Registration for Apprenticeship form must be duly completed.

### **3.0 PROBATIONARY PERIOD**

The probationary period for each memorandum of understanding will be six months. Within that period the memorandum may be terminated by either party upon giving the other party and the Provincial Apprenticeship and Certification Board one week notice in writing.

### **4.0 TERMINATION OF A MEMORANDUM OF UNDERSTANDING**

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

## 5.0 APPRENTICESHIP PROGRESSION SCHEDULE AND WAGE RATES

### 5.1 Progression Schedule

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

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

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

Program Duration	Wage Rates		Comments
<b>7200 Hours</b>	1 <sup>st</sup> Year	55%	These wage rates are percentages of the prevailing journeyperson's wage rate in the place of employment of the apprentice. No apprentice shall be paid less than the wage rate established by the Labour Standards Act (1988), as now in force or as hereafter amended, or by other Order, as amended from time to time replacing the first mentioned Order.
	2 <sup>nd</sup> Year	65%	
	3 <sup>rd</sup> Year	75%	
	4 <sup>th</sup> Year	90%	
<b>5400 Hours and 4800 Hours</b>	1 <sup>st</sup> Year	55%	
	2 <sup>nd</sup> Year	70%	
	3 <sup>rd</sup> Year	85%	
4000 (Hairstylist) - The apprentice shall be paid no less than the minimum wage for hours worked and a commission agreed upon between the apprentice and the employer.			

## 6.0 TOOLS

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

## 7.0 PERIODIC EXAMINATIONS AND EVALUATION

7.1 Every apprentice shall submit to such occupational tests and examinations as the Board shall direct. If after such occupational tests and examinations the apprentice is found to be making unsatisfactory progress, his/her rate of

wage shall not be advanced as provided in Section 5 until his/her progress is satisfactory to the Director of Institutional and Industrial Education and his/her date of completion shall be deferred accordingly. Persistent failure to pass required tests shall be a cause for revocation of his/her Memorandum of Understanding.

- 7.2 Upon receipt of reports of accelerated progress of the apprentice, the Board may shorten the term of apprenticeship and advance the date of completion accordingly.
- 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 Board shall issue a Certificate of Apprenticeship

## 9.0 HOURS OF WORK

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

## 10.0 COPIES OF THE REGISTRATION FOR APPRENTICESHIP

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

## 11.0 RATIO OF APPRENTICES TO JOURNEYPERSONS

The ratio of Apprentices to Journeypersons normally shall not exceed one apprentice to every one journeyperson employed. Exceptions for specific occupations may occur with the approval of the Provincial Apprenticeship and Certification Board.

## 12.0 RELATIONSHIP OF THE PLAN OF TRAINING TO A COLLECTIVE BARGAINING AGREEMENT

Collective agreements take precedence over the conditions outlined in the plan of training.

## 13.0 AMENDMENTS TO A PLAN OF APPRENTICESHIP TRAINING

A plan of training may be amended at any time by the Provincial Apprenticeship and Certification Board.

## 14.0 EMPLOYMENT, RE-EMPLOYMENT AND TRAINING REQUIREMENTS

- 14.1 The plan of training requires Apprentices to attend regularly their place of employment.
- 14.2 The plan of training requires Apprentices to regularly attend training programs for that occupation as prescribed by The Provincial Apprenticeship and Certification Board.
- 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 M.O.U.'s reinstated by the Provincial Apprenticeship and Certification Board but would be subject to a commitment to complete the entire program as outlined in the General Conditions of Apprenticeship. Permanent cancellation in the said occupation is the result of non-compliance.
- 14.4 Cancellation of the Memorandum of Understanding to challenge journeyperson examinations, if unsuccessful, would require an apprentice to serve a time penalty of two (2) years before reinstatement as an apprentice or registering as a Trade Qualifier.
- 14.5 Under the plan of training the employer is required; to keep each apprentice employed as long as work is available, and if the apprentice is laid off due to lack of work, to give opportunity to be re-employed before another is hired.
- 14.6 The employer will permit each apprentice to attend regularly training programs as prescribed by the Provincial Apprenticeship and Certification Board.
- 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 Youth Services and Post-Secondary Education within 30 days of the decision.

## **REQUIREMENTS FOR RED SEAL CERTIFICATION**

1. Evidence that the required work experiences outlined in this plan of training have been obtained. This evidence must be in a format that clearly outlines the experiences and must be signed by an appropriate person or persons attesting that these experiences have been obtained to the level required.
2. Normally, a combination of training from an accredited training program and suitable work experience totalling 7200 hours

Or

A total of 9000 hours of suitable work experience.

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

## **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 captures, in a broad sense, these roles and the responsibilities that result from them.

### **The Apprentice**

- ▶ to complete all required technical training courses as approved by the Provincial Apprenticeship and Certification Board.
- ▶ to find appropriate employment.
- ▶ to complete all required work experiences in combination with the required hours.
- ▶ to ensure that the work experiences are well documented.
- ▶ to approach apprenticeship training with an attitude and commitment that fosters the qualities necessary for a successful career as a qualified journeyperson.
- ▶ to obtain the required hand tools as specified by the Board for each period of training of the apprenticeship program.

### **The Employer**

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

### **The Training Institution**

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

### **The Industrial Training Division**

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

### **The Provincial Apprenticeship and Certification Board**

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

## **TS 1510                    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.

### **Course Outcomes:**

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

1. prevent accidents and illnesses
2. improve health and safety conditions in the workplace

### **Theory**

1. Interpret the Occupational Health and Safety Act laws and regulations
  - a. Explain the scope of the act
    - Application of the act
    - Federal/Provincial jurisdictions
    - Canada Labour Code
    - Rules and regulations
    - Private home application
    - Conformity of the Crown by the Act
2. Explain responsibilities under the Act & Regulations
  - Duties of employer, owner, contractors, sub-contractors, employees, and suppliers
3. Explain the purpose of joint health and safety committees
  - Formation of committee
  - Functions of committee
  - Legislated rights
  - Health and safety representation
  - Reporting endangerment to health
  - Appropriate remedial action
  - Investigation of endangerment
  - Committee recommendation
  - Employer's responsibility in taking remedial action
4. Examine right to refuse dangerous work
  - Reasonable grounds for refusal

- Reporting endangerment to health
- Appropriate remedial action
- Investigation of endangerment
- Committee recommendation
- Employer's responsibility to take appropriate remedial action
- Action taken when employee does not have reasonable grounds for refusing dangerous work
- Employee's rights
- Assigning another employee to perform duties
- Temporary reassignment of employee to perform other duties
- Collective agreement influences
- Wages and benefits

5. Describe discriminatory action

- Definition
- Filing a complaint procedure
- Allocated period of time a complaint can be filed with the Commission
- Duties of an arbitrator under the Industrial Relations Act
- Order in writing inclusion
- Report to commission Allocated period of time to request Arbitrator to deal with the matter of the request
- Notice of application
- Failure to comply with the terms of an order
- Order filed in the court

6. Explain duties of commission officers

- Powers and duties of officers
- Procedure for examinations and inspections
- Orders given by officers orally or in writing
- Specifications of an order given by an officer to owner of the place of employment, employer, contractor, sub-contractor, employee, or supplier
- Service of an order
- Prohibition of persons towards an officer in the exercise of his/her power or duties
- Rescinding of an order
- Posting a copy of the order
- Illegal removal of an order

7. Interpret appeals of others

- Allocated period of time for appeal of an order
- Person who may appeal order
- Action taken by Commission when person involved does not comply with the order
- Enforcement of the order

- Notice of application
- Rules of court

8. Explain the process for reporting of accidents

- Application of act
- Report procedure
- Reporting notification of injury
- Reporting accidental explosion or exposure
- Posting of act and regulations

**Practical:**

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

- (A) Describe work situations that one might want to refuse.
- (B) Interview someone in your occupation on two or more aspects of the act and report results.

**TS1530**

**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** Standard First Aid Certificate course.

**TS 1520**

## **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).

### **Course Outcomes:**

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

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

### **Required Knowledge and Skills:**

1. Define WHMIS safety
  - Rational and key elements
  - History and development of WHMIS
  - WHMIS legislation
  - WHMIS implementation program
  - Definitions of legal and technical terms
2. Examine hazard identification and ingredient disclosure
  - Prohibited, restricted and controlled products
  - Classification and the application of WHMIS information requirements
  - Responsibilities for classification
  - the supplier
  - the employer
  - the worker - Classification: rules and criteria
  - information on classification
  - classes, divisions and subdivision in WHMIS
  - general rules for classification
  - class A - compressed gases
  - class B - flammable and combustible materials
  - class C - oxidizing material
  - class D - poisonous and infectious material
  - class E - corrosive material
  - class F - dangerously reactive material
  - 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
- Comparison of classification systems - WHMIS and TDG
- General comparison of classification categories
- Detailed comparison of classified criteria

3. Explain labeling and other forms of warning

- Definition of a WHMIS label
  - supplier label
  - workplace label
  - other means of identification
- Responsibility for labels
  - supplier responsibility
  - employer responsibility
  - worker responsibility
- Introduce label content, design and location
  - supplier labels
  - workplace labels
  - other means of identification

4. Introduce material safety data sheets (MSDS)

- Definition of a material safety data sheet
- Purpose of the data sheet
- Responsibility for the production and availability of data sheets
  - supplier responsibility
  - employer responsibility
  - workers responsibility

**Practical**

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

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

**SUGGESTED RESOURCES:**

1. WHMIS Regulation
2. Sample MSDS sheets

**NOA Reference:**

The material covered satisfies in whole or in part, the requirements of the National Occupational Analysis tasks.

**Course Outcomes:**

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

- demonstrate knowledge of safety regulations applied to industry, to the trade, to employers and employees.
- demonstrate knowledge of hazards, safe work practices and good housekeeping on the job site and in the workshop environment.
- demonstrate knowledge of personal protective safety equipment and fall arrest systems, and their care and use.

**Theory:****PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT**

1. Identify personal protective clothing and equipment.
  - hearing
  - eye
  - respiratory
  - body
  - foot
  - hand
  - head
2. Identify hearing protection, their types, applications and use.
  - muffs
  - plugs
  - combination
  - decibels (sound measurement)
3. Identify Safety Glasses, their types, applications and use.
  - protection from light
  - protection from liquids
  - protection from solid objects
  - protection from hot objects
  - protection from compressed air
4. Identify respiratory protection, their types, applications and use.
  - respiratory system (inhalation)
  - air-purifying
  - self contained breathing apparatus

5. Identify body coverings, their types, applications and use.
  - Clothing material (natural/synthetic)
  - coveralls
  - rain wear
  - winter garment (layering)
  - skin protection (sun/UV/corrosives, etc.)
6. Identify foot protection, their types, applications and use.
  - toe
  - arch
  - puncture
  - ankle
7. Identify hand protection, their types, applications and use.
  - temperature
  - abrasions
  - vibration
  - chemical
8. Identify head protection, their types, applications and use.
  - hard hat classification
  - liners
  - chin straps
9. Identify inspection and maintenance procedures for personal protective equipment.
  - hearing
  - eye
  - respiratory
  - body
  - foot
  - hand
  - head

## FALL PROTECTION

10. Identify types of fall prevention equipment and describe their use and care.
  - arrest
  - restraint
  - prevention
11. Identify types of fall prevention systems and their use and care.
  - guardrails system
  - floor opening protection
  - wall openings

## WORKING ENVIRONMENTS

12. Identify the hazards and precautions to be taken when working in a confined space.
  - health hazards
  - oxygen deficiency/enrichment
  - explosive atmospheres
  - IDLH (immediately dangerous to life or health)
  - emergency response
  - retrieval devices
  - monitoring equipment
13. Identify fire control equipment, its applications and procedures for use.
  - fire extinguisher classification
  - fire blankets
  - fire classification
    - A
    - B
    - C

## INDUSTRIAL HEALTH HAZARDS

14. Identify types of industrial health hazards.
  - solid (dusts)
  - liquid
  - atmospheric
  - electrical
  - ergonomics
15. Identify ways hazardous materials enter the body.
  - absorption
  - inhalation
  - ingestion
16. Identify workplace hazardous materials.
  - compressed gases
  - flammables
  - poisons-acute/chronic
  - corrosives
  - dangerously reactive
  - oxidizers
  - biohazardous
  - hazardous fibres
17. Identify WHMIS requirements.
  - symbols
  - material safety data sheets

18. Identify health hazards presented by building materials.

- wood preservatives
- dusts
- heavy metals
- off-gasing
- fibers
- asbestos
- exotic woods
- 

## STATUTORY DOCUMENTS

19. Identify applicable health and safety legislation and describe their requirements.

- personal protection
- fall protection
- temporary support structures
- working environment
- harassment
- health & safety
- material handling
- confined space
- access/egress
- electrical hazards

### **Practical:**

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

1. Select and demonstrate the proper use of personal protective equipment

**NOA Reference:**

This material covered satisfies in whole or in part, the requirements of the National Occupational Analysis task 1.

**Course Outcomes:**

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

- demonstrate knowledge of construction drawings, specifications, regulations and codes.

**Theory:****FUNDAMENTALS OF CONSTRUCTION DRAWINGS**

1. Identify the different types of drawings and describe their use.
  - blueprints
  - architectural
  - structural
  - mechanical
  - electrical
  - shop drawings
  - manufacturers supplied drawings
2. Identify architectural specifications and describe their purpose and use.
3. Identify construction regulations, codes and standards.
  - National Building Code
  - Canadian Standards Association standards
  - Architectural Woodwork Manufacturers Association of Canada
  - Buildings Accessibility Act and Regulations
4. Describe the importance of specifications and their precedence over working drawings.
5. Describe the alphabet of lines.
  - object
  - broken
  - extension
  - dimension
  - centre
  - leader
  - break
  - cutting plane

6. Identify and describe blueprint symbols and abbreviations.
  - wall symbols
  - exterior
  - interior
  - mechanical
  - masonry
  - scale

## READING CONSTRUCTION DRAWINGS

7. Identify and describe the use of types of drawings.
  - elevation
  - floor
  - mechanical
  - manufacturers
8. Identify and describe information on building plans.
  - lines
  - symbols
  - dimensions
  - elevations
  - plan views
  - abbreviations
  - design
  - window/door schedules
  - section views
  - finish schedules
  - isometric
  - cabinets, casework and furniture details
9. Describe the use of information on elevation views.
  - orientation
  - symbols
  - scale

## BASIC SKETCHING

10. Explain the purpose of sketching.
  - communication
  - visualization
  - explaining details
11. Describe freehand sketching techniques.
  - lines
  - proportion
  - circles
  - irregular shapes

### **Practical:**

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

1. Identify and interpret information contained in construction drawings.
2. Locate information from blueprints and drawings.
3. Read and interpret architectural drawings.
  - floor
  - details
  - elevations
  - sections
4. Interpret specifications.
  - manufacturing
  - tolerance
  - company standards books
5. Use codes, regulations and standards
  - National Building Code
  - Canadian Standards Association standards
  - Architectural Woodwork Manufacturers Association of Canada
  - Buildings Accessibility Act and Regulations
6. Develop freehand sketches with regard to:
  - details
  - joints
  - layouts
7. Produce shop drawings for a selected project.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 2.

**Course Outcomes:**

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

- use hand tools.

**Theory:**

1. Identify the main types of hand tools and describe their applications, accessories, care and use.
  - measuring
  - layout
  - alignment
  - levels
  - sanders
  - edge-cutters (hand planes & chisels)
  - saws
  - drilling and boring
  - clamps
  - glue applicators
  - sharpeners and conditioners
2. Describe the procedures used to sharpen hand tools.

**Practical:**

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

1. Maintain hand tools and demonstrate sharpening procedures.
2. Demonstrate safe working procedures when using hand tools.
3. Demonstrate the storage of hand tools.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis

**Course Outcomes:**

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

- select and use fasteners and adhesives.

**Theory:**

1. Identify the main types of fasteners and describe their characteristics, applications and procedures to install.
  - general
    - nail
    - brads
    - screws
    - biscuits
    - dowels
    - staples
    - wall inserts
  - special purpose
    - knockdown hardware
    - tight joint fasteners
    - cabinet connectors
    - angle brackets
2. Identify the various metals and coatings used in fasteners and explain their advantage.
3. Identify the main types of adhesives and describe their characteristics, applications and procedures to prepare and apply.
  - hide glue
  - casein glue
  - standard and cross-linking polyvinyl resins
  - urea-resin
  - resorcinol
  - epoxy
  - contact cements
  - hot-melts
  - mastics
  - solvents

4. Identify and describe the most suitable adhesive for specific applications in terms of:
  - shelf-life, pot-life
  - assembly times
  - moisture conditions, temperatures
  - undesirable staining of materials
  - coloring of glue
  - type of material to be glued
  - moisture content
5. Describe how to store and maintain adhesives.

**Practical:**

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

1. Select appropriate, space and install fasteners for various tasks.
2. Select and apply glues and adhesives.
3. Mix glues and apply adhesives according to manufacturers specifications using:
  - brushes
  - rollers
  - bottles
  - glue spreaders
  - glue injectors
4. Apply the required pressures to glue joints.
5. Square projects using clamps.
6. Glue up solid lumber.
7. Clean, maintain and store gluing tools and equipment.
8. Clean up excess glue from projects following a lay-up period.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis

**Course Outcomes:**

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

- demonstrate knowledge of the materials used in cabinetmaking.

**Theory**

1. Identify and classify the different types of solid wood common to the Cabinetmaker trade:

**Hardwoods (deciduous):**

- white oak
- American black walnut
- elm
- birch
- beech
- maple
- oak
- ash
- walnut
- mahogany
- cherry
- poplar

**Softwoods (coniferous):**

- basswood
- pine
- cedar
- spruce
- fir

2. Identify the geographic areas of growth for hard and softwoods.

3. Describe the different common methods of producing lumber:

- plain sawn/flat grained
- quarter sawn/edge grained
- rift sawn/rift grained

4. Describe the relative commercial values of lumber:

- costs
- types

- sizes
- waste factor

5. Identify the structure and growth properties of wood
6. Describe the cell structure of wood and how different properties are affected by it.
7. Identify properties of common wood species.
  - density
  - color
  - odor
  - strength
  - hardness
  - aesthetics
  - stiffness
  - bending qualities
  - affects of light regarding discoloration
8. Identify the different types of wood grains:
  - straight
  - irregular
  - curly
  - spiral
  - interlocked
  - open and closed
9. Identify common grades and the criteria used for grading softwood and hardwood lumber.
10. Describe the common defects and flaws related to growth and machining:
  - felling shakes
  - wind shakes
  - pitch pockets
  - knots
  - stress
  - birds eyes
  - burls
11. Describe the nominal and actual dimensions of softwood and hardwood lumber.
12. Describe seasoning and storage processes in relation to:
  - moisture content
  - equilibrium moisture content
  - relative humidity
13. Describe the method used to identify the moisture content in wood samples:
  - oven drying

- moisture meter

14. Describe the process for:

- air drying
- kiln drying (types of kilns)

15. Describe flaws and defects related to improper drying and storage:

- case-hardening
- checks
- warpage
- honeycomb
- stains (stickers, molds, etc.)
- rot

16. Describe the procedures to calculate board, lineal and square feet.

17. Identify the different types of veneers used in industry:

- herring bone
- slip match
- book match (flat sliced)
- diamond match
- quarter sliced
- rift sliced
- rotary cut.

18. Describe the storage and handling of veneers.

19. Discuss relative commercial values of veneers by cost, type, size and waste factors.

20. Identify manufactured wood products.

- plywood (interior, exterior and speciality)
- other core materials

21. Identify the core-types commonly used.

- veneer
- lumber
- particle board
- oriented strand board
- fibre-board
- combination
- balanced construction (laminates, veneers, etc.)

22. Describe the advantages of core-type woods over solid woods.

23. Describe the manufacturing methods of face veneers.

- rotary
- flat sliced

24. Describe the advantages and disadvantages of various composite core materials.
  - particle-board
  - fibre-board
  - hard-board
25. Describe how different moisture-conditions affect composite core materials and storage.
26. Describe the use of sheet material.
  - plastic
  - Plastic Laminated
27. Describe common sizes and types of solid surface materials.
  - acrylic
  - polyester
28. Identify types of glass and describe their properties, thickness and use.
  - float
  - tempered
  - laminated
  - wired
29. Describe the procedures used to cut glass, smooth and webering edges.
30. Describe installation requirements for glass and mirrors:
  - setting and spacing blocks
  - stops and special tracks
  - hardware
31. Describe brass, stainless steel, chrome, copper and aluminum in terms of:
  - use
    - bases
    - inlays
    - structural
    - facings
  - strength
  - surface treatment
  - types, sizes
  - adhering properties to wood
  - methods of cutting
  - finishes
32. Describe extruded mouldings, their types and applications:
  - vinyl
  - aluminum

33. Discuss cutting, shaping and securing methods for extruded mouldings.
34. Describe sound control relative to:
  - transmission
  - absorption
  - reflection
35. Describe the materials and methods used to control sound.
36. Describe the standard types of molding.

**Practical:**

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

Theory only.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 2, ,3, 6, 7, 12.

**Course Outcomes:**

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

- operate portable power tools.

**Theory:**

1. Identify pneumatic power sources and connections.
2. Identify the types of portable power tools and describe their applications, safety accessories, care and use.
  - saws
    - circular
    - jig
    - reciprocating
    - mitre
  - drills
  - screwdrivers
  - planes
  - sanders
    - belt
    - finish
  - routers and trimmers
  - nailers and staplers
  - plate joiners
  - screw guns
  - heat guns
  - pocket screw jigs and dowel jigs
3. Describe the importance of matching accessories for portable power tools to their intended use.
  - blades
  - fences
  - knives
  - template guides
  - cutters
  - depth gauges
  - bits
4. Describe the use and care of extension cords and air hoses.
5. Describe powder-actuated tools (low velocity), their applications, care and use.
  - types

- safety
- codes and regulations
- fasteners and charges
- causes of and disposal of misfires
- relationships between pins, charges and materials.

**Practical:**

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

1. Set up and use pneumatic and electric hand tools.
2. Use the different types of staples and pins with a portable pneumatic nailer and stapler.
3. Service and store powder-actuated tools and supplies.
4. Operate a low velocity tool.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 2, ,3, 6, 7, 12.

**Course Outcomes:**

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

- operate common stationary equipment.

**Theory:**

1. Describe safety precautions for electrical power sources.
  - single and three phase connections
  - voltage and amperage/line loss
  - signs of overload in motors
  - lockout procedure
2. Identify the types of common stationary equipment and describe their applications, safety accessories, care and use.
  - saws
    - table
    - band
    - radial-arm
    - panel (vertical and sliding)
    - scroll
    - cut-off
  - glue sprayers
  - edge-bander
  - sanders
    - disk
    - stroke
    - edge
    - spindle
    - drum/wide belt
  - mortisers
    - bit
    - chain
    - oscillating
    - chisel
  - drill presses
  - planers
  - jointers
  - shapers
  - borers

- bench grinders

3. Describe the importance of matching accessories for common stationary equipment to their intended use.
  - blades
  - knives
  - cutters
  - bits
  - jigs
4. Describe the requirements for maintenance and log keeping.

**Practical:**

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

1. Set-up and operate common stationary equipment.
2. Change and maintain blades, bits and cutters.
3. Fabricate a jig.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 6, 7, 14, 15, 16.

**Course Outcomes:**

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

- fabricate and assemble joints.

**Theory:**

1. Describe the principles involved in joining wood.
2. Identify and describe the different forces affecting joints.
  - shear
  - tensile
  - compression
3. Identify the types of woodworking joints and describe their characteristics and applications.
  - butt
  - mitre
  - lap joints
  - dado
  - rabbet joint
  - dowel joint
  - tongue and groove joints
  - spline joints
  - mortise and tenon joints
  - dovetail joints
  - biscuit or plate joint
  - coped joint
  - finger
  - scarf
  - pocket screwed joints
4. Describe the procedures used to fabricate and assemble joints.

**Practical**

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

1. Fabricate joints from solid woods and manufactured materials.
2. Develop and interpret basic shop drawings and simple layouts.
3. Develop and fit joints to specifications using:
  - hand tools
  - power tools
4. Assemble joints by using:
  - glue
  - clamps
  - assorted fasteners
5. Clean-up joints.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 8, 9, 10, 11, 12, 13.

**Course Outcomes:**

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

- identify different types of laminates.
- perform laminating procedures.

**Theory:**

1. Identify types of laminates and describe their characteristics, applications and use.
  - wood
  - Plastic
  - metal on plastic laminate
2. Classify laminates according to:
  - grades
  - finishes
  - sizes
  - specialties (solid core and acid resistant)
3. Describe the properties and applications of laminates regarding:
  - machining
  - bending
  - gluing
  - installing
4. Describe the manufacturing procedures for plastic laminates.
5. Describe the procedures used to install and finish laminates.
  - measuring and over sizing
  - selection and use of adhesives
  - adhesion methods
  - application sequence for edges and surfaces
  - application sequence for curved surfaces
  - trimming
    - hand and power tools
    - inside corners
  - selection and use of cleaning solvents
6. Describe briefly the manufacturing process for post-formed countertops.

7. Describe the procedures for joining plastic laminates using hand and power tools.
8. Describe the procedures for joining plastic laminates to other materials using hand and power tools.
9. Describe the criteria for selecting materials for laminating.
  - solid woods, plywoods or veneers
  - sizes
  - moisture contents
  - density
  - grain patterns
  - colors
  - temperature
10. Identify the criteria for selecting glues related to use of product:
  - moisture conditions
  - temperature conditions
  - strength requirements
11. Describe gluing, assembling and clamping systems relative to:
  - growth rings and grain direction
  - special milling of components
12. Describe the clamping and lay-up systems relative to:
  - clamps, jigs and wedges
  - length of lay-up times related to glues and temperature
13. Define the terms sizing and dressing of glued up units.
14. Describe the procedures for dry bending solid woods and plywoods relative to:
  - wood species
  - material
  - grains and radii
  - kerf cuts
  - lamination of layers
15. Describe the procedures for steam bending solid woods and plywoods relative to:
  - wood species
  - material
  - grains and radii
  - lamination of layers

**Practical:**

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

1. Apply laminates.
2. Bend wood using dry and steam methods.
3. Apply laminates to curved surfaces.
  - select materials
  - select adhesives
  - select proper tools
  - apply laminates
  - conduct final cleanup
4. Laminate solid wood.

**CAB-1130**

## Specialty Stationary Equipment

## NOA Reference:

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 2, 3, 6, 7, 12.

## Course Outcomes:

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

- operate specialty stationary equipment.

## Theory:

1. Identify the types of specialty stationary equipment and describe their applications, safety accessories, care and use.
  - lathes
  - tenoners
    - single end
    - double end
  - cold and hot presses
  - dovetailer
  - guillotine
  - drill tub
  - hinge & line boring machine
  - veneer stitcher
  - drill pocketing machine
2. Describe the importance of matching accessories for specialty stationary equipment tools to their intended use.
  - blades
  - fences
  - knives
  - guides
  - cutters
  - hold downs
  - bits
  - guards
  - power feed attachments

## Practical

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

1. Demonstrate an ability to set up and operate light production equipment.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 2, 3, 6, 7, 12.

**Course Outcomes:**

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

- operate high production equipment.

**Theory:**

1. Identify the types of high production equipment and describe their applications, safety accessories and care and use.
  - saws
    - straight line rip
    - multi-rip
  - gluers
    - spray
    - spreader
  - clamping
    - case clamp
    - clamp carrier
  - pneumatic press
  - profile grinders
  - CNC equipment
  - horizontal copying lathe
  - profile sander
  - moulder
  - edge bander
  - optimizing cut-off saw
  - beam saw
2. Describe the importance of matching accessories for high production equipment tools to their intended use.
  - blades - guides
  - knives - guards
  - cutters - fences
  - bits - power feed attachments

**Practical:**

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

1. Demonstrate an ability to set-up and operate high production equipment.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 6, 7, 14, 15, 16.

**Course Outcomes:**

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

- identify and install hardware used in basic casework.
- layout and assemble basic casework.

**Theory:**

1. Identify common types of hinges and describe their characteristics, applications and procedures to install.
  - butt
  - surface mounted
  - concealed
  - semi-concealed
  - pin
  - piano
  - double action hinge
2. Describe the advantages and disadvantages of common hinges in relation to:
  - strength
  - aesthetics
  - adjustments
3. Identify the types of handles, pulls, knobs and accessories and describe their characteristics, applications and procedures to install.
4. Describe typical location of hardware relative to:
  - style
  - balance
  - application
5. Identify the types of catches, locks and latches and describe their characteristics, applications, location and procedures to install.
  - touch latches
  - friction
  - magnetic and roller - bullet catches
  - drawer/door locks
  - gang locks
  - anti-tilt devices (drawers)
  - elbow catches

- double-ball catches
- escutcheon plates

6. Identify types of hardware used for sliding cabinet doors and drawers and describe their characteristics, applications and procedures to install.

- shop made (wood on wood)
- manufactured types (metal and nylon)

7. Identify types of hardware for adjustable/non-adjustable shelves and describe their characteristics, applications, spacing and procedures to install.

- standards
- ferrules
- pins
- brackets
- cleats

8. Identify types of special purpose hardware and describe their characteristics, applications, location and procedures to install.

- tray-lift
- turning shelf
- tambour
- lid stays
- racks
- flipper/pocket door
- cabinet connectors
- grommets (cable holes)
- levelers
- casters
- computer
- blind corner
- miscellaneous

9. Describe jigs and templates used for location and installation of hardware.

10. Identify types of knockdown fittings and describe their characteristics, applications, location and procedures to install.

11. Describe the 32mm system.

12. Describe the procedures used to fabricate casework.

- preliminary work
  - shop drawings
  - notes
  - layout rods
  - other full-scale layouts
  - cutting lists/optimizing
  - planning

- - sectional
- - knockdown
- - shop/site assembled
- selection of materials
  - solid stock
  - sheet materials
  - allowance for waste
- selection of cutting and surfacing equipment
- cutting procedures and sequence
- machining methods
  - custom work
  - mass production
- sanding and prefinishing (before final assembly)
- pre-assembly
- assembly

13. Describe the procedures used to fabricate and construct basic cabinet doors.

- planning
- selection of materials
- construction
- installation and adjustment of hardware

14. Describe the procedures used to fabricate and construct basic cabinet drawers.

- planning
- selection of materials
- construction
- installation and adjustment of hardware

## MILLWORK

15. Describe the procedures used to fabricate and construct interior and exterior doors.

- planning
  - sizing
  - clearances
- selection of materials
- door construction
  - panel
  - solid
  - core (veneer)
- installation and adjustment of hardware

16. Identify types of interior and exterior door jambs and describe their characteristics, applications and procedures to install.

- machining requirements
- side-light requirements
- transom requirements

17. Describe the procedure used to fabricate window frames and sashes.

- Planning
  - sizing
  - clearances
- selection of materials
- construction of materials
  - joint selection
  - sash installation
  - glazing procedures

**Practical:**

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

1. Fabricate casework with doors and drawers.

- develop layout-rod
- select materials
- produce cutting list
- cut sheet material
- break-out solid woods
- dress and cut to size
- glue up or laminate panels
- machine components
- assemble
- install hardware

2. Develop a project using:

- jigs
- templates
- stops

3. Demonstrate the 32 mm system.

4. Fabricate a project using millwork procedures.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 17 and 18.

**Course Outcomes:**

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

- demonstrate knowledge of finishing products and wood preparation.
- apply finishing products using proper techniques.

**Theory:**

1. Identify the types of abrasives and describe their applications.
  - flint
  - garnet
  - aluminum oxide
  - silicon carbide
  - abrasive fibres
  - pumice
  - rotten stone
  - rubbing compound
2. Describe the characteristics of abrasives,
  - hardness
  - sharpness
  - color
  - open/closed
  - wet/dry
3. Describe grit-sizes and their usage.
4. Identify the differences between types and grades of backing materials used for sheets and belts:
  - high quality paper
  - cloth
5. Describe pre-finishing procedures.
  - glue removal
  - final surface repairs
    - final sanding
    - filling
  - metal
6. Identify which finishing process should be used to achieve desired appearances and performance.
7. Identify the bleaches and the compatible neutralizers commonly used for wood.

8. Describe procedures to prepare and apply standard bleach.
9. Identify the types of stains and describe their characteristics, applications and procedures for use.
  - water
  - alcohol
  - oil
10. Describe the standard staining operations to achieve the desired color.
11. Describe the use of paste wood fillers.
12. Describe the difference between sealing and wash-coating.
13. Identify the products that are compatible with successive top-coats.
14. Identify the types of finishing products and describe their characteristics, applications and procedures for use.

- lacquers	- shellacs
- varnishes	- water based finishes
- oils	- uv finishes
- wax-finishes	- polyesters
- synthetic finishes	
15. Identify compatible solvents and thinners for finishing products.
16. Describe the different methods of applying finishing coats.
  - a) spraying
  - b) brushing
  - c) wiping
17. Describe special customized treatments and their applications related to:
  - glazing
  - shading (antique effects)
  - distressing
18. Describe common finishing problems and their solutions.
19. Identify the types of spray equipment and describe their applications, adjustments, care and use.
  - conventional
  - airless and air assisted airless
  - hot spray
  - electrostatic
  - high volume - low pressure
  - flat line systems

20. Describe fire hazards posed by finishing products.
21. Describe the harmful effects of vapors from solvents and how to protect against them:
  - respiratory
  - skin and eye
22. Describe the safe disposal of potentially dangerous or harmful materials.
  - oily rags
  - finishing products

**Practical:**

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

1. Prepare projects previous to applying finish.
  - removing glue
  - final surface repair
    - filling
    - final sanding
2. Establish finishing process required to achieve desired appearances and durability.
3. Apply different types of stain to wood.
4. Stain project to achieve desired colors including sap-staining, shading and toning.
5. Apply sealer and wash-coats.
6. Apply top-coats.
  - lacquers
  - varnishes
  - oils
  - wax finishes
  - synthetic finishes
  - shellac
7. Apply finish coats.
  - clear
  - light or dark tones
  - high or low sheen
8. Use different types of spray equipment to demonstrate spray techniques.
9. Clean and store tools and spray equipment.

10. Select and use compounds for a particular application.

- pumice
- rotten stone
- wax
- rubbing compound

# **CAB-1155 Advanced Casework and Furniture Design**

## **NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 6, 7, 14, 15, 16.

## **Course Outcomes:**

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

- demonstrate knowledge of furniture design and layouts of architectural woodwork.
- design and construct casework and furniture using a variety of advanced machining techniques.

## **Theory:**

### **FURNITURE**

1. Describe principles and elements relating to cabinetry:
  - harmony
  - rhythm (veneer selection)
  - proportion
  - balance and emphasis
2. Identify and describe the different styles of furniture.
3. Describe the color wheel and its applications.
4. Describe accepted industry practices in heights, widths and depths relative to:
  - service and work counters
  - tables, desks, vanities, chairs, benches, visual boards
  - knee and toe spaces
  - traffic flow
  - golden mean rectangle (Geometric ratio & proportion)
5. Describe the use of specifications and drawings and their applications relative to customized cabinets, furniture units and other fixtures.
6. Describe industry practices with regard to:
  - sequences of work
  - layouts, cutting lists
  - breakout of material
  - machining and assembly
  - shipping and installation
7. Describe production procedures based on availability of equipment.

8. Describe face and backing veneer preparation including:
  - selection of veneer
  - methods of cutting veneer
  - methods of jointing veneer
  - matching
9. Describe gluing practices for vacuum, manual and hydraulic presses using hot and cold methods:
  - type of glue used
  - pressures
  - loading
10. Identify the various trimming methods when using hand and power tools.
11. Describe construction relevant to:
  - legs and rails
12. Describe construction for sloped and contoured casework.
  - doors
  - drawers
  - hardware
  - joints

## PANELING

13. Describe architectural woodworking and its application for paneling for walls and ceilings.
14. Describe the various joints for pre-assembled frame and panel construction.
15. Describe installation methods for panelling walls and ceiling.
  - nail
  - glue
  - screw
  - hang
16. Describe the procedures for panelling walls and ceilings.
  - preparation and layout
  - selection of hardware
  - installation
  - touch up and finish
17. Describe the application of solid tongue and groove panelling with considerations given to shrinkage problems.
18. Describe flush panelling and its applications.

19. Describe grain-figure selection and various matchings for desired effect.

- wall panels
- ceiling panels
- transom panels
- mouldings

**Practical:**

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

1. Layout and build casework to reflect design and style principles:
  - selection (wood)
  - sizing of cores
  - wood veneer applications
  - various matchings
  - frame and panel-units
  - geometric shapes
  - arched items
  - wood bending
  - laminating

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 8 and 9.

**Course Outcomes:**

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

- construct and install stairs.

**Theory:****FUNDAMENTALS OF STAIR CONSTRUCTION**

1. Describe relevant issues, practices and procedures relating to:
  - safety
  - materials
  - fasteners
  - joinery
  - tools
  - blueprint reading
  - building codes
2. Identify and describe types of common stairs.
  - straight flight
  - L-shaped
  - U-shaped
  - winder
  - interior
  - curved
3. Define stair terminology.
  - total rise
  - total run
  - unit rise
  - unit run
  - headroom
  - flight
  - line of travel
  - effective depth
  - angle of incline
  - open and closed stringers
  - balustrade
  - wedges

4. Identify and describe stair components and their characteristics.

- stringers
- risers
- treads
- skirts
- nosing
- newels
- ballaster
- handrails
- guardrails
- fillets
- rousettes
- finials
- shoe rails
- easements
- goosenecks
- volutes
- landings

5. Identify and describe components of finish stairs.

- stringers
  - open
  - closed
  - housed
- wall skirt
- mitred skirt
- nosing return
- newels
  - starting newel
  - landing newel
- balustrade
- gooseneck
- volute
- turn out
- level to rake (handrail)
- balluster
- fillet
- stringer and buttress cap
- riser
- tread
- moldings

6. Describe the procedures to calculate finish stair material.

- balluster spacing
- ballusters
- tread stock
- riser stock

- skirt material
- stringers
- buttress
- handrail
- newel posts
- fillets
- mouldings
- shoe rail
- housed stringer
- open stringer

7. Describe the layout, construction and installation of finish stairs.

- total rise
- total run
- unit rise
- unit run
- headroom
- stair ratio
- fasteners
- adhesives
- NBC
- drop of stringer
- hangers
- attachment
- handrail
- guardrails
- landings
- line of flight
- storey pole
- materials
- stair joinery
- assembly
- scribing
- jig
- template
- reveal
- equalizing first tread rise
- stairwell opening
- code reference

## GEOMETRIC STAIRS

8. Describe the types of geometric stairs.

- spiral
- circular
- elliptical
- curved

9. Describe the components of geometric stairs.

- wall skirts
- mitred skirts
- gooseneck
- volutes
- turnouts
- level to rake (handrail)
- ballusters
- ballustrade
- nosing return
- starting newel
- landing newel
- fillets
- string and buttress caps
- tread
- riser
- staved stringer
- laminated stringer
- handrail
- line of travel
- point of radiance
- rough framing

10. Describe the procedures to calculate geometric stair dimensions.

- inner tread width
- outer tread width
- circumference
- length of handrails
- length of stringers
- total rise
- total run
- unit rise
- number of risers
- number of treads
- degree of turn
- inner radius
- outer radius
- unit run at the line of travel
- tread angle
- rough opening dimensions

11. Describe the construction and installation of geometric stairs.

- geometric layout
- moulds
  - drums
  - staved
- laminate stringer

- stretch out line
- reference lines
- treads
- risers
- staving
- handrails
- winders
- fasteners
- adhesives
- ballusters
- ballustrades
- volutes
- rosettes
- goose necks
- easements
- shoe rail
- finial
- fillets

## Practical

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

1. Calculate stair dimensions.
2. Estimate materials
3. Design, construct and install a stair system.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task I

**Course Outcomes:**

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

- develop free hand sketches
- develop shop drawings
- layout for shop projects

**Theory:**

1. Describe the pertinent information found on drawings.
  - architectural
  - structural drawings
  - mechanical drawings
  - electrical drawings
  - shop drawings
2. Describe plan views in relation to:
  - partition-layout
  - room-size
  - door and window location
  - location of millwork
3. Describe the process to interpret interior elevation views, sections and details and cross-reference with specifications and room-finishing schedules to make the shop-drawings.
4. Describe how preparatory and finishing work by other trades affects the cabinetmaker's work.
  - backing in partitions and walls
  - interior finish on floors and walls
  - mechanical and electrical work
5. Describe how to construct geometric shapes and lines.
  - draw lines to scale
  - scale lines
  - divide lines into equal parts
  - bisect lines
  - angles
  - bisect angles
  - concave and convex curves

- circles, arcs, tangents, ellipses, polygons
- 6. Describe procedures to sketch orthographic projections
  - visualize object
  - select views
  - layout sketch
  - sketch projection
  - dimension sketch
  - make notations

**Practical:**

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

1. Develop freehand sketches.
2. Develop working drawings and layouts.
3. Construct geometric shapes and lines.
  - draw lines to scale
  - scale lines
  - divide lines into equal parts
  - bisect lines
  - angles
  - bisect angles
  - concave and convex curves
  - circles, arcs, tangents, ellipses, polygons
4. Sketch orthographic projections.
  - visualize object
  - select views
  - layout sketch
  - sketch projection
  - dimension sketch
  - make notations
5. Evaluate designs using such concepts as:
  - a) balance
  - b) proportion
6. Design an efficient kitchen-cabinet layout.
7. Use working drawings and specifications of a commercial building and produce:
  - a) shop drawings
  - b) sketches of typical millwork

8. Develop shop drawings and layouts for shop-projects, including all necessary views and details and materials take-off lists.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 6.

**Course Outcomes:**

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

- identify zoning regulations and permits
- identify the roles of other construction trades

**Theory:**

1. Describe the role of federal, provincial and municipal authorities with regards to:
  - research
  - regulations and codes (NBC, CSA)
  - zoning and permits
2. Describe the procedure for obtaining building permits.
3. Describe the basic zoning regulations.
4. Identify and describe the roles of architects, engineers, designers and construction associations.
5. Describe the legal relationship that exists between the general and the subcontractor.
6. Describe the responsibilities of the cabinetmaker in relationship to the:
  - client
  - architect
  - general contractor
  - designer
7. Describe sequencing and scheduling of trades relevant to:
  - bar charts
  - critical path methods
  - scheduling (supply dates and starts)
  - completion times
8. Describe the required procedures to follow for changing design and specifications of work in progress.
9. Identify and describe the importance of appropriate communications with fellow employees.

10. Identify the regulations dealing with maximum allowable exposure to noise and the importance of protecting one's hearing.
  - Define "decibels".
11. Identify the dangers associated with radiation from high-frequency electronic gluing and drying equipment.
12. Describe the possible hazards from vibrating tools.
13. Describe the structure of companies with regards to:
  - difference between proprietorship and Ltd. Co.
  - payments, sales tax and G.S.T.
  - contracts (general, construction)
  - Bid Depository
  - labour costs
  - material costs
  - overhead costs
14. Explain the basic requirements for valid legal contracts; circumstances that may result in voided contracts; what constitutes a breach of contract.
15. Describe the legal relationships which exist in construction contracts and the legal precedence of construction documents regarding:
  - owner
  - designer
  - general contractor
  - sub-contractors
  - suppliers-workers
  - architect
16. Describe how labour costs are calculated with regards to:
  - direct wages
  - indirect labour costs
  - record keeping- (time sheets)
  - piece-work
17. Explain how material costs are calculated from material-lists.
18. Describe the most common overhead costs and identify the differences between:
  - small shops
  - large production shops
19. Describe Quality Control systems.

**Practical:**

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

Theory only.

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 5, 12.

**Course Outcomes:**

Upon completion of this course, apprentices will be able to install specific shop casework to specifications and drawings.

**Theory:**

1. Identify the accepted heights and spacings of wall mounted units.
2. Describe how studs or backings can be found in framed walls.
3. Describe the proper securing methods and materials:
  - adhesives
  - screws and bolts
  - hollow and solid wall fasteners
4. Identify various types of counter-top surface materials :
  - marble
  - granite
  - solid
  - stainless steel
  - butcher block
  - tile
  - plastic laminate
5. Describe the problems associated with alignments and adjustments due to minor warpages and imperfect walls and floors.
6. Describe procedures for:
  - leveling
  - plumbing
  - shimming
  - scribing
  - co-ordinating project with other trades
7. Describe the checks for ease of operation following installation of doors, drawers, slides, etc.

**Practical:**

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

1. Install casework according to specifications and drawings.
2. Demonstrate good housekeeping practices

**NOA Reference:**

The material in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task I.

**Course Outcomes:**

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

- sketches, shop drawings to specifications for commercial projects.

**Theory:**

1. Describe arbitrary and conflicting information within drawings and specifications for commercial buildings.
2. Describe the various details and specifications for walls, ceilings and column in plan elevations, sectional and exploded views for commercial buildings.
3. Describe Reflected Ceiling Plans and the information they contain.

**Practical:**

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

1. Produce quick freehand sketches.
2. Develop layouts, templates and full-scale patterns.
3. Develop shop drawings for all shop projects.
4. Develop appropriate cutting lists.
5. Produce a shop drawing according to detailed specifications and instructions.

## **CAB-1175      Blueprint IV (Computer Aided Drafting)**

### **NOA Reference:**

The materials in the course satisfies in whole or in part, the requirements for the National Occupational Analysis for the Cabinetmaker Occupation Task 1.

### **Course Outcomes:**

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

- demonstrate knowledge of computer aided drafting.

### **Theory:**

1. Describe drafting tools and materials used for drawing plans.
2. Describe the use of:
  - computer assisted drawings
  - computer spreadsheets
  - computer estimating software
  - CNC equipment
3. Describe the procedures in generating computer drawings, including:
  - orthographic views
  - isometric views
4. Describe how to use computer assisted drafting to draw a room containing cabinets which includes:
  - job parameters
  - exterior walls, doors and windows
  - peninsula walls
  - appliance placement
  - lower and upper cabinets
  - cabinet choice and modifications
  - counter tops choice and modification
  - moulding choice and placement
  - view elevation, perspective and bird's eye view
  - set up of rendering graphics(customizing the color & texture specifications)
  - cut list and modifications
  - job costing
  - accessories
  - estimates
  - set up multi-draw
5. Describe how to use computer assisted drafting to draw a room containing a commercial counter which includes:
  - cross-sections of the cabinets

- detail drawings of special sections and joints required
- proper text and dimensions
- set up multi-drawings

6. Describe the procedure to save and print plans.
7. Describe the different types of computer software available to the cabinetmaking industry.

**Practical:**

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

1. Use computer assisted drafting to draw a room containing cabinets which includes:
  - job parameters
  - exterior walls, doors and windows
  - peninsula walls
  - appliance placement
  - lower and upper cabinets
  - cabinet choice and modifications
  - counter tops choice and modification
  - moulding choice and placement
  - view elevation, perspective and bird's eye view
  - set up of rendering graphics
  - cut list and modifications
  - job costing
  - accessories
  - estimates
  - set up multi-draw
2. Use computer assisted drafting to draw a room containing a commercial counter which includes:
  - cross-sections of the cabinets
  - detail drawings of special sections and joints required
  - proper text and dimensions

## **REQUIRED RELATED COURSES**

**Description:**

This course is designed to give students the opportunity to study the principles of effective writing. Applications include letters, memos, and short report writing.

**Course Outcomes:**

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

- 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 an informal report

**Required Knowledge and Skills:****1.0 Review of Sentences and Paragraph Construction**

- 1.1.1 Define a sentence and review the four types.
- 1.1.2 Identify the essential parts of a sentence, particularly subject and predicate, direct and indirect object.
- 1.1.3 Differentiate among phrases, clauses, and sentences.
- 1.1.4 Explore the major concepts related to subject-verb agreement.
- 1.1.5 Apply rules and principles for writing clear, concise, complete sentences which adhere to the conventions of grammar, punctuation, and mechanics.

**1.2 Examine and Apply Principles of Paragraph Construction**

- 1.2.1 Discuss the basic purposes for writing.
- 1.2.2 Define a paragraph and describe the major characteristics of an effective paragraph.
- 1.2.3 Write well-developed, coherent, unified paragraphs which illustrate the following: A variety of sentence arrangements; conciseness and clarity; and adherence to correct and appropriate sentence structure, grammar, punctuation, and mechanics.

**2.0 Business Correspondence****2.1 Examine the Value of Business Writing Skills**

- 2.1.1 Discuss the importance of effective writing skills in business

- 2.1.2 Discuss the value of well-developed writing skills to career success
- 2.2 Examine Principles of Effective Business Writing
  - 2.2.1 Discuss the rationale and techniques for fostering goodwill in business communication, regardless of the circumstances
  - 2.2.2 Review the importance of revising and proofreading writing
- 2.3 Examine Business Letters and Memos
  - 2.3.1 Differentiate between letter and memo applications in the workplace
  - 2.3.2 Identify the parts of a business letter and memo
  - 2.3.3 Explore the standard formats for business letters and memos
  - 2.3.4 Examine guidelines for writing an acceptable letter and memo which convey: acknowledgment, routine request, routine response, complaint, refusal, and persuasive request, for three of the six types listed
  - 2.3.5 Examine samples of well-written and poorly written letters and memos

3.0 Informal Report

- 3.1 Examine the Fundamentals of Informal Business Reports
  - 3.1.1 Identify the purpose of the informal report
  - 3.1.2 Identify the parts and formats of an informal report
  - 3.1.3 Identify methods of information gathering
- 3.2 Apply Informal Report Writing Skills and Oral Reporting Skills
  - 3.2.1 Gather pertinent information
  - 3.2.2 Organize information into an appropriate outline
  - 3.2.3 Draft a five minute informal report
  - 3.2.4 Edit, proofread, and revise the draft to create an effective informal report and present orally using visual aids.

**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:

- know and understand quality customer service
- know why quality service is important
- know and understand the relationship between “service” and “sales”
- understand the importance of and to demonstrate a positive attitude
- recognize and demonstrate handling of customer complaints

**Required Knowledge and Skills:**

1. Providing Quality Service
  - Define quality service
  - List the types of quality service
  - Define Service vs. Sales or Selling
  - Explain why quality service is important
  - Identify the various types of customers
  - Define customer loyalty
2. Determining Customers Wants and Needs
  - List four levels of customer needs
  - Identify important customer wants and needs
  - Identify ways to ensure repeat business
3. Demonstrating a Positive Attitude
  - List the characteristics of a positive attitude
  - Explain why it is important to have a positive attitude
  - List ways that a positive attitude can improve a customer’s satisfaction
  - Define perception
  - Explain how perception can alter us and customers
  - Understand how to deal with perception

4. Effectively Communicating with customers

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

5. Effectively using Questioning Techniques

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

6. Using the Telephone Effectively

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

7. Asserting Oneself: Handling Complaints and Resolving Conflict

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

8. Dealing with Difficult Customers

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

## **SP 2330        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
- develop an awareness of quality management principles and processes

### **Required Knowledge and Skills:**

1. Describe the reasons for quality assurance and quality plans.
2. Explain the relationship between quality assurance and quality control.
3. Describe quality control procedures as applied to the production and checking of engineering drawings in applicable occupations.
4. Describe quality control procedures as applied to the acceptance and checking of raw materials.
5. Explain the role of communications in quality management.
6. Explain why it is important for all employees to understand the structure of the company and its production processes.
7. Explain how human resource effectiveness is maximized in a quality managed organization.
8. Explain the role of company policy in quality management.
9. Explain the purpose of codes and standards.
10. Explain the concepts of quality
  - a. cost of quality
  - b. measurement of quality
  - c. quality control and quality assurance
  - d. elements of quality

- e. elements of the quality audit
- f. quality standards
- g. role expectations and responsibilities

11. Explain the structure of quality assurance and quality control

- a. Define quality assurance, quality control and documentation terminology
- b. Describe organizational charts
- c. List the elements of a quality assurance system
- d. Explain the purpose of the quality assurance manual
- e. Describe quality assurance procedures
- f. Explain the key functions and responsibilities of personnel

12. Complete quality assurance/quality control documentation

- a. Describe methods of recording reports in industry
- b. Describe procedures of traceability (manual and computer-based recording)
- c. Identify needs for quality control procedures

13. Apply quality control to projects

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

**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.

**Course Outcomes:**

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

- computer systems and their operation.
- popular software packages, their applications and future trends in computer applications

**Required Knowledge and Skills:**

1. Microcomputer System Hardware and Software Components
  - 1.1 Microcomputer Hardware
    - 1.1.1 System Components
      - 1.1.1.1 Identify major components of a computer system.
    - 1.1.2 Function of each Component
      - 1.1.2.1 Describe the function of the microprocessor.
      - 1.1.2.2 Describe and give examples of I/O DEVICES.
      - 1.1.2.3 Describe primary storage (RAM, ROM, Cache).
      - 1.1.2.4 Define bit, byte, code and the prefixes k.m. and g.
      - 1.1.2.5 Describe secondary storage (diskettes and hard disks, CD ROMS, Zip Drives etc).
      - 1.1.2.6 Describe how to care for a computer and its accessories.
  - 1.2 Microcomputer Software
    - 1.2.1 Software Definition and Types
      - 1.2.1.1 Define software.
      - 1.2.1.2 Describe, operational and application software used in this course.
      - 1.2.1.3 Define file and give the rules for filenames and file extensions..
    - 1.2.2 System Software (Windows 95)

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

### 1.2.3 File Management Commands (Windows 95)

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

## 2. Word Processing

### 2.1 Keyboarding Techniques

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

### 2.2 Word Processing

#### 2.2.1 Understanding word processing

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

#### 2.2.2 Create a document

- 2.2.2.1 Change the Display
- 2.2.2.2 The Enter Key
- 2.2.2.3 Enter Text

#### 2.2.3 Save, Open and Exit a document.

- 2.2.3.1 Save a document
- 2.2.3.2 Close a document.
- 2.2.3.3 Start a new document Window
- 2.2.3.4 Open a document
- 2.2.3.5 Exit Word Processor

#### 2.2.4 Edit a Document

- 2.2.4.1 Add New Text
- 2.2.4.2 Delete text
- 2.2.4.3 Basic Format Enhancement (split and join paragraphs, insert text)

#### 2.2.5 Understand Hidden Codes

- 2.2.5.1 Display Hidden Codes
- 2.2.5.2 Delete Text Enhancements

#### 2.2.6 The Select Feature

- 2.2.6.1 Identify a Selection
- 2.2.6.2 Move a Selection
- 2.2.6.3 Copy a Selection
- 2.2.6.4 Delete a Selection
- 2.2.6.5 Select Enhancements
- 2.2.6.6 Save a Selection
- 2.2.6.7 Retrieve a Selection

#### 2.2.7 Change Layout Format

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

#### 2.2.8 Change Text Attributes

- 2.2.8.1 Change text attributes: (bold, underline, font, etc.)

#### 2.2.9 Use Auxiliary Tools

- 2.2.9.1 Spell Check

#### 2.2.10 Select the Print Feature

- 2.2.10.1 Select the Print Feature: (i.e; number of copies and current document)
- 2.2.10.2 Identify various options in print screen dialogue box

### 3. Electronic Spreadsheet

#### 3.1 Spreadsheet Basics

##### 3.1.1 The Worksheet Window

#### 3.2 Operates Menus

##### 3.2.1 Use a Menu Bar

##### 3.2.2 Use a Control Menu

##### 3.2.3 Use a Shortcut Menu

##### 3.2.4 Save, Retrieve from Menus

#### 3.3 Create a Worksheet

##### 3.3.1 Enter Constant Values and Formulas

##### 3.3.2 Use the Recalculation Feature

##### 3.3.3 Use Cell References (relative and absolute references)

#### 3.4 Use Ranges

##### 3.4.1 Type a Range for a Function

##### 3.4.2 Point to a Range for a Function

##### 3.4.3 Select a Range for Toolbar and Menu Commands

#### 3.5 Print a Worksheet

##### 3.5.1 Print to the Screen

##### 3.5.2 Print to the Printer

##### 3.5.3 Print a Selected Range

#### 3.6 Edit a Worksheet

##### 3.6.1 Replace Cell Contents

##### 3.6.2 Insert and Delete Rows and Columns

##### 3.6.3 Change Cell Formats

##### 3.6.4 Change Cell Alignments

##### 3.6.5 Change Column Width

##### 3.6.6 Copy and Move Cells

### 4. Electronic Mail and the Internet

#### 4.1 Electronic Mail

##### 4.1.1 Compose and send an e-mail message

##### 4.1.2 Retrieve an e-mail attachments

##### 4.1.3 Send an e-mail message with attachments

- 4.1.4 Retrieve and save e-mail attachments
- 4.1.3 Print an e-mail message
- 4.1.4 Delete an e-mail message

## 4.2 The Internet

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

**Description:**

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

**Course Outcomes:**

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

- Participate in meetings (conduct meetings).
- Be aware of union procedures
- Be aware of workers' compensation regulations.
- Be aware of occupational health and safety regulations.
- Be aware of employment insurance regulations
- Be aware of workers' rights.
- Be aware of human rights

**Required Knowledge and Skills:**

1. Meetings
  - a. Explain preparation requirements prior to conducting a meeting
  - b. Explain the procedures for conducting a meeting.
  - c. Explain participation in meetings.
  - d. Explain the purpose of motions.
  - e. Explain the procedure to delay discussion of motions.
  - f. Explain how to amend and vote upon a motion.
2. Unions
  - a. Why do unions exist?
  - b. Give a concise description of the history of Canadian labour.
  - c. How do unions work?
  - d. Explain labour's structure.
  - e. Describe labour's social objectives.
  - f. Describe the relationship between Canadian labour and the workers.
  - g. Describe the involvement of women in unions.
3. Worker's Compensation
  - a. Describe the aims, objectives, benefits and regulations of the Workers Compensation Board.
  - b. Explain the internal review process.
4. Occupational Health and Safety
  - a. Describe the rules and regulations directly related to your occupation.

5. Employment Insurance Regulations
  - a. Explain employment insurance regulations
  - b. Describe how to apply for employment insurance.
  - c. Explain the appeal process.
6. Worker's Rights
  - a. Define labour standards.
  - b. Explain the purpose of the Labour Standards Act.
  - c. List regulations pertaining to:
    - i. Hours of work.
    - ii. Minimum wages.
    - iii. Employment of children.
    - iv. Vacation pay
7. Human Rights
  - a. Describe what information cannot be included on an application.
  - b. Describe what information cannot be included in an interview
  - c. Why is there a Human Rights Code?
  - d. Define sexual harassment.
8. Participate in meetings.
  - a. Follow the form of getting a motion on the floor
  - b. Discuss a motion
  - c. Amend a motion
  - d. Vote on a motion.
9. Complete a safety inspection of your shop.
10. Complete an employment insurance application form.
11. Write a letter of appeal.
12. Analyze a documented case of a human rights complaint with special emphasis on the application form, time frame, documentation needed, and legal advice available.

**Description:**

This fifteen-hour seminar is designed to give students an introduction to the critical elements of effective job search techniques.

**Required Knowledge and Skills:****Examine and Demonstrate Elements of Effective Job Search Techniques**

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

**Description:**

This fifteen-hour seminar 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.

**Required Knowledge and Skills:**

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

