NOVA SCOTIA
APPRENTICESHIP
AGENCY

NOVA SCOTIA CURRICULUM STANDARD FARM TECHNICIAN

Based on the Nova Scotia Occupational Standard

NSCS V1 | 2022

Nova Scotia Apprenticeship Curriculum Standard

Farm Technician

Preface

This Nova Scotia Curriculum Standard (NSCS) is intended to assist instructional staff in the design and delivery of technical, in-class training in support of the apprenticeship program.

This NSCS contains all the technical training elements required to complete the apprenticeship program and has been developed based on the 2022 Nova Scotia Occupational Standard (NSOS) for the trade.

Implementation of the NSCS for Apprenticeship training is outlined in the following table.

Level	Implementation Effective
Level 1	2023-2024
Level 2	2024-2025

The above implementation schedule was current at time of publication.

Granting of credit or permission to challenge level examinations (if applicable) for pre-apprenticeship training for this trade will be based on the content outlined in this standard. Training providers must contact the Nova Scotia Apprenticeship Agency for more information on the process and requirements for determining eligibility for credit towards an apprenticeship program.

Acknowledgements

The Nova Scotia Apprenticeship Agency (Agency) wishes to acknowledge the contributions of trade advisory committee members, tradespersons, industry establishments, professional associations, labour organizations, training providers, government departments and agencies, and all others who contributed to this publication.

Special thanks are offered to the following representatives who contributed greatly to the original draft of the standard and provided expert advice throughout its development.

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User Guide

Nova Scotia Curriculum Standards (NSCS) are developed based on Red Seal Occupational Standards (RSOS) or Nova Scotia Occupational Standards (NSOS) and industry consultation. This document represents the minimum content to be delivered as part of the apprenticeship program for this trade.

The NSCS documents are purposefully constructed for ease of use and flexibility of structure in order to adapt to all delivery requirements. They detail units of training, unit outcomes and objectives. They do not impose a delivery model or teaching format.

Training providers will select and develop delivery materials and techniques that accommodate a variety of learning styles and delivery patterns. The NSCS does not dictate study materials, textbooks or learning activities to be used in delivery.

This document includes a Level Structure to facilitate mobility for apprentices moving from one jurisdiction to another.

Structure

The content of the NSCS is divided into units. Unit codes are used as a means of identification and are not intended to convey the order of delivery. It is at the discretion of the training provider to deliver the content in the required logical sequence of delivery within the level. Units may be delivered one at a time or concurrently within a level, provided all outcomes are met.

The Learning Outcomes: describe what the apprentice should know or be able to do at the end of training. Wording of the Learning Outcomes:, “Demonstrate knowledge of…” acknowledges the broad spectrum of ways in which knowledge can be assessed (i.e. practical projects, multiple choice testing, presentations, etc.) by instructional staff within the training.

User Guide (continued)

The Occupational Standard (OS) to Curriculum Comparison chart maps the OS trade skills/sub-tasks to the curriculum standard.

Each unit of training in the curriculum standard lists both theoretical and Practical Objectives:, which represent the minimum content that must be covered during technical training. Detailed content/bulleted lists for each objective have not been developed. Where detail is required for clarity, content has been provided.

The Practical Objectives: represent the tasks/skills that apprentices must be exposed to during technical training. An individual or group performance of the task/skill is recommended; if not possible, an instructor demonstration is acceptable. Training Providers should use practical, hands-on learning whenever possible, whether identified in the curriculum standard as a practical objective or not.

Each unit also provides Suggested Hours: (a guide only), which can be adjusted for apprentice learning, delivery methods, practical/hands-on learning, examinations, registration, holidays, storm days, etc.

Glossary of Terms

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

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

Glossary of Terms (continued)

SERVICE	Routine inspection and replacement of worn or deteriorating parts. An act or business function provided to a customer in the course of an individual's profession (e.g., haircut).
TECHNIQUE	Within a procedure, the manner in which technical skills are applied.
TEST	v. To subject to a procedure that ascertains effectiveness, value, proper function or other quality. n. A way of examining something to determine its characteristics or properties, or to determine whether or not it is working correctly.
TROUBLESHOOT	To follow a systematic procedure to identify and locate a problem or malfunction and its cause.

Essential Skills Profiles

Through extensive research, the Government of Canada and other national and international agencies have identified and validated key essential skills for the workplace. These skills are used in nearly every job and at different levels of complexity. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Essential Skills Profiles describe how workers in various occupations use each of the key essential skills. They include:

- a brief description of the occupation;
- examples of tasks that illustrate how each essential skill is applied; and,
- complexity ratings that indicate the level of difficulty of the example tasks.

Essential Skills profiles can be found on the Employment and Social Development Canada (ESDC) website at https://www.canada.ca/en/services/jobs/training/initiatives/skills-success/tools.html

The development and improvement of these Essential Skills is inherent throughout the apprenticeship training program as apprentices work towards achieving journeyperson status.

Profile Chart

WORKPLACE SAFETY			
FRM-100 Safety			
TOOLS AND SHOP SKILLS			
FRM-105 Tools and Equipment	FRM-110 Testing and Measurement Devices	FRM-115 Shop Equipment	FRM-120 Access Equipment
FRM-125 Lifting and Moving Equipment			
COMMUNICATION AND MENTORING			
MENT-700 Mentoring I	MENT-701 Mentoring II		
EQUIPMENT			
FRM-140 Farm Equipment	FRM-205 Materials and Handling Equipment	FRM-210 Automated Equipment	FRM-215 Seeding and Application Equipment
FACILITIES, GROUNDS AND INFRASTRUCTURE			
FRM-145 Grounds and Access Points	FRM-150 Farm Infrastructure	FRM-220 Water Management	
FARM MANAGMENT			
FRM-155 Record Keeping	FRM-160 Food Safety	FRM-165 Animal Care	FRM-225 Job Planning
FRM-230 Human Resources			
CROP PRODUCTION			
FRM-170 Production Site Preparation	FRM-235 Input Inventory and Production Planning	FRM-175 Production Monitoring	FRM-180 Crop Health
FRM-185 Livestock Health	FRM-190 Pest Management	FRM-195 Environmental Stewardship	

SALE AND DISTRIBUTION PREPARATION			
FRM-240 Harvest and Collection	FRM-245 Waste Management	FRM-250 Post-Harvest Management	FRM-255 Market Preparation
FRM-260 Program Review			

Level Structure

Level 1, 5 Weeks (150 hrs)

Code	Unit Title	Hrs*	Pg	Practical Objectives:*
FRM-100	Safety	12	12	1. Identify workplace hazards.
FRM-105	Tools and Equipment	9	9	N/A
FRM-110	Testing and Measurement Devices	6	6	N/A
FRM-115	Shop Equipment	3	3	N/A
FRM-120	Access Equipment	6	6	N/A
FRM-125	Lifting and Moving Equipment	9	9	N/A
MENT-700	Mentoring I	6	6	N/A
FRM-140	Farm Equipment	18	18	N/A
FRM-145	Grounds and Access Points	3	3	N/A
FRM-150	Farm Infrastructure	6	6	1. Calculate materials needed for maintenance.
FRM-155	Record Keeping	15	15	1. Use spreadsheets to perform record keeping and basic functions.
FRM-160	Food Safety	6	6	N/A
FRM-165	Animal Care	6	6	1. Calculate stocking densities.
FRM-170	Production Site Preparation	3	3	N/A
FRM-175	Production Monitoring	6	6	N/A
FRM-180	Crop Health	6	6	N/A
FRM-185	Livestock Health	12	12	N/A
FRM-190	Pest Management	12	12	N/A
FRM-195	Environmental Stewardship	6	6	N/A

Level Structure (continued)

Level 2, 4 Weeks (120 hrs)

Code	Unit Title	Hrs*	Pg	Practical Objectives:*
MENT-701	Mentoring II	6	60	N/A
FRM-205	Material Handling Equipment	9	62	1. Calculate volume and density of material.
FRM-210	Automated Equipment	9	64	N/A
FRM-215	Seeding and Application Equipment	9	66	1. Calculate seeding and application rates.
FRM-220	Water Management	6	68	1. Read a water analysis and interpret recommendations.
FRM-225	Job Planning	6	70	N/A
FRM-230	Human Resources	9	72	N/A
FRM-235	Input Inventory and Production Planning	9	74	N/A
FRM-240	Harvest and Collection	9	78	1. Perform calculations to determine harvest yield.
FRM-245	Waste Management	6	79	N/A
FRM-250	Post-Harvest Management	6	81	N/A
FRM-255	Market Preparation	6	83	N/A
FRM-260	Program Review	30	85	N/A

***Hours:** The time it should take to cover the unit (a guide only).

***Practical Objectives::** The tasks/skills apprentices must be exposed to during technical training. An individual or group performance of the task/skill is recommended; if not possible, an instructor demonstration is acceptable. Training Providers should use practical, hands-on learning whenever possible, whether identified in the curriculum as a practical objective or not.

2021 Occupational Standard Sub-task to Curriculum Unit Comparison

RSOS or NSOS Sub-task		Unit of Training	
Task A-1 – Performs safety-related functions.			
A-1.01	Uses personal protective equipment (PPE) and safety equipment.	FRM-100	Safety
A-1.02	Maintains safe worksite.	FRM-100	Safety
A-1.03	Protects the environment.	FRM-195	Environmental Stewardship
Task A-2 – Uses tools and equipment.			
A-2.01	Uses hand and power tools.	FRM-105	Tools and Equipment
A-2.02	Uses testing and measurement devices.	FRM-110	Testing and Measurement Devices
A-2.03	Uses shop equipment.	FRM-115	Shop Equipment
A-2.04	Uses access equipment.	FRM-120	Access Equipment
A-2.05	Uses jacking/lifting, loading and moving equipment.	FRM-125	Lifting and Moving Equipment
Task A-3 Uses communication and mentoring techniques			
A-3.01	Uses communication techniques.	MENT-700	Mentoring I
		MENT-701	Mentoring II
A-3.02	Uses mentoring techniques.	MENT-700	Mentoring I
		MENT-701	Mentoring II
Task B-4 Operates and maintains farm equipment			
B-4.01	Uses farm equipment.	FRM-140	Farm Equipment
B-4.02	Maintains farm equipment.	FRM-140	Farm Equipment
B-4.03	Operates material handling equipment.	FRM-205	Material Handling Equipment
B-4.04	Operates automated equipment.	FRM-210	Automated Equipment
B-4.05	Operates seeding and application equipment.	FRM-215	Seeding and Application Equipment
Task B-5 Maintains facilities, grounds and infrastructure			

RSOS or NSOS Sub-task		Unit of Training	
B-5.01	Maintains farm grounds and access points.	FRM-145	Grounds and Access Points
B-5.02	Performs routine maintenance to farm infrastructure.	FRM-150	Farm Infrastructure
B-5.03	Manages farm water.	FRM-220	Water Management
Task B-6 Performs farm management practices			
B-6.01	Performs record keeping.	FRM-155	Record Keeping
B-6.02	Practices on-farm food safety and animal care programs.	FRM-160	Food Safety
		FRM-165	Animal Care
B-6.03	Plans projects and tasks.	FRM-225	Job Planning
B-6.04	Performs human resource leadership.	FRM-230	Human Resources
B-6.05	Performs human resource tasks.	FRM-230	Human Resources
Task C-7 Performs production tasks			
C-7.01	Prepares production site.	FRM-170	Production Site Preparation
C-7.02	Maintains input inventory.	FRM-235	Input Inventory and Production Planning
C-7.03	Implements production plan.	FRM-235	Input Inventory and Production Planning
C-7.04	Monitors production.	FRM-175	Production Monitoring
C-7.05	Maintains crop health.	FRM-180	Crop Health
C-7.06	Maintains livestock health.	FRM-185	Livestock Health
C-7.07	Controls pests.	FRM-190	Pest Management
Task C-8 Prepares products for sale or distribution			
C-8.01	Prepares for harvest and collection.	FRM-240	Harvest and Collection
C-8.02	Performs harvest and collection.	FRM-240	Harvest and Collection
C-8.03	Manages production waste.	FRM-245	Waste Management
C-8.04	Stores product.	FRM-250	Post-Harvest Management
C-8.05	Prepares product for market.	FRM-255	Market Preparation

Level 1
5 Weeks (150 hours)

FRM-100 Safety (12 hrs)

Learning Outcomes:

- Demonstrate knowledge of personal protection equipment (PPE) and safety equipment, their applications, maintenance and procedures for use.
- Demonstrate knowledge of standards and regulations pertaining to PPE and safety equipment.
- Demonstrate knowledge of maintaining a safe work environment.
- Demonstrate knowledge of regulatory requirements pertaining to a safe work environment.

Nova Scotia Occupational Standard Reference:

1.01 Uses personal protective equipment (PPE) and safety equipment.
1.02 Maintains safe worksite.

Suggested Hours:

12 hours

Theoretical Objectives:

1. Define terminology associated with PPE and safety equipment.

2. Identify workplace hazards and describe safe work practices.
   i) personal
   ii) environmental
   iii) shop/facility
   iv) high voltage systems
   v) production sites
   vi) biological
   vii) controlled atmosphere storage
   viii) confined spaces
      - grain tanks
      - silos
      - manure pit
   ix) chemical
   x) heights
   xi) livestock
   xii) motorized equipment
   xiii) spills
   xiv) defective equipment

xv) livestock waste storage
xvi) hydraulics
xvii) high-pressure systems

3. Interpret codes and regulations pertaining to workplace hazards and safe work practices.
   i) Occupational Health and Safety (OH&S)
   ii) Workplace Hazardous Materials Information System (WHMIS)
   iii) Globally Harmonized System
   iv) Motor Vehicle Act
   v) Pesticide Regulations
   vi) Environmental Regulations
   vii) Transportation and Dangerous Goods

4. Identify types of PPE and safety equipment and describe their applications and procedures for use.
   i) PPE
      - safety boots
      - safety glasses
      - respirator
      - single-use disposable suit
      - gloves
      - dust masks
      - safety vests
      - bee suits
      - harnesses
      - aprons
      - face shields
      - hearing protection
      - sunscreen
      - insect repellant
      - safety sunglasses
      - hard hats
   ii) safety equipment
      - rollover protection structures
      - seatbelt
      - ventilation
      - first aid kits
      - fire extinguishers
      - eye wash stations
      - lock out devices
      - cages
      - atmospheric monitors
      - fall protection

- guards
- shields
  - power take-off (PTO)

5. Describe the procedures used to inspect, maintain and store PPE and safety equipment.
   i) excessively worn PPE
   ii) damaged PPE
   iii) expired PPE and safety equipment

6. Describe the procedures used to handle, store, transport and dispose of hazardous materials.

7. Describe procedures used to lock-out, tag-out and isolate equipment and confirm zero energy.

8. Describe the procedures used to conduct a job hazard assessment.
   i) job tasks
   ii) identify hazards
   iii) identify controls
   iv) identify PPE

Practical Objectives:

1. Identify workplace hazards.

FRM-105 Tools and Equipment (9 hrs)

Learning Outcomes:

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

Nova Scotia Occupational Standard Reference:

2.01 Uses hand and power tools.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with hand and power tools.

2. Identify hazards and describe safe work practices pertaining to working with hand and power tools.

3. Interpret regulations and standards pertaining to hand and power tools.
   i) Occupational Health and Safety (OH&S)

4. Identify types of hand tools and describe their applications and procedures for use.
   i) wrenches
   ii) screwdrivers
   iii) saws
   iv) hammers
   v) tin snips
   vi) prybars

5. Identify types of power tools and describe their applications and procedures for use.
   i) electric drills
   ii) grinders
   iii) air tools
   iv) saws
   v) sanders
   vi) planers

6. Describe the procedures used to inspect, maintain and store hand and power tools.

Practical Objectives:

N/A

FRM-110 Testing and Measurement Devices (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of testing and measurement devices, their applications, maintenance and procedures for use.
- Demonstrate knowledge of testing and measurement device calibration.

Nova Scotia Occupational Standard Reference:

2.02 Uses testing and measurement devices.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with testing and measurement devices.

2. Identify hazards and describe safe work practices pertaining to working with testing and measurement devices.

3. Identify types of testing and measurement devices and describe their applications and procedures for use.
   i) scales
   ii) pH and EC meters
   iii) injectors
   iv) refractometers
   v) flow meters
   vi) weather stations
   vii) multimeter

4. Describe the procedures used to calibrate and verify calibration on testing and measurement devices.

5. Identify factors which influence device accuracy and calibration.

6. Describe the procedures used to log test results.

7. Describe the procedures used to inspect, maintain and store testing and measurement devices.

Practical Objectives:

N/A

FRM-115 Shop Equipment (3 hrs)

Learning Outcomes:

- Demonstrate knowledge of shop equipment, their applications, maintenance and procedures for use.

Nova Scotia Occupational Standard Reference:

2.03 Uses shop equipment.

Suggested Hours:

3 hours

Theoretical Objectives:

1. Define terminology associated with shop equipment.

2. Identify hazards and describe safe work practices pertaining to shop equipment.

3. Interpret regulations and standards pertaining to shop equipment.
   i) Occupational Health and Safety (OH&S)

4. Identify types of shop equipment and describe their applications and procedures for use.
   i) torches
   ii) welding equipment
   iii) grinders
   iv) saws
   v) presses
   vi) air compressors
   vii) ventilation

5. Describe the procedures used to inspect, maintain and store shop equipment.

Practical Objectives:

N/A

FRM-120 Access Equipment (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of access equipment, their applications, maintenance and procedures for use.
- Demonstrate knowledge of safety practices pertaining to access equipment.
- Demonstrate knowledge of regulatory requirements pertaining to access and fall protection equipment.

Nova Scotia Occupational Standard Reference:

2.04 Uses access equipment.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with access equipment.

2. Identify hazards and describe safe work practices pertaining to access equipment.

3. Interpret regulations and standards pertaining to access equipment.
   i) Occupational Health and Safety (OH&S)
   ii) Fall Protection
   iii) Confined Spaces

4. Identify tools and equipment pertaining to access equipment and describe their applications and procedures for use.
   i) fall arrest system

5. Identify types of access equipment and describe their characteristics and applications for use.
   i) ladders
   ii) fixed ladders
   iii) scaffolding
   iv) mobile elevated work platforms
   v) rigid rail
   vi) greenhouse lift carts

6. Identify factors to consider when selecting access equipment.
   i) safety
   ii) load characteristics
   iii) environment
   iv) application

7. Describe the procedures used to set up and operate access equipment.

8. Describe the procedures used to inspect, store and maintain access equipment.

Practical Objectives:

N/A

FRM-125 Lifting and Moving Equipment (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of lifting and moving equipment, their applications and procedures for use.
- Demonstrate knowledge of calculations required when performing lifting and moving operations.
- Demonstrate knowledge of safety practices pertaining to lifting and moving equipment.
- Demonstrate knowledge of regulatory requirements pertaining to lifting and moving equipment.
- Demonstrate knowledge of communication methods used during lifting and moving operations.

Nova Scotia Occupational Standard Reference:

2.05 Uses jacking/lifting, loading and moving equipment.

Suggested Hours:

9 hours

Theoretical Objectives:

1. Define terminology associated with lifting and moving equipment.

2. Identify hazards and describe safe work practices pertaining to lifting and moving equipment.
   i) overhead lines
   ii) excavations
   iii) excessive loads
   iv) weather
   v) road conditions
   vi) load shifts
   vii) uneven terrain
   viii) tree branches

3. Interpret codes, regulations and standards pertaining to lifting and moving equipment.
   i) Occupational Health and Safety (OH&S)

4. Interpret information pertaining to lifting and moving equipment found in owner manuals.

5. Identify types of lifting and moving equipment and describe their characteristics, applications and procedures for use.
   i) slings
   ii) come-alongs/chain falls
   iii) shackles
   iv) jacks
   v) hoists
   vi) belts
   vii) ropes
   viii) cables
   ix) spreader bars
   x) pry bars
   xi) tow chains
   xii) hitch pins

6. Identify factors to consider when selecting lifting and moving equipment.
   i) safety
   ii) load characteristics
   iii) equipment and accessories
   iv) environment
   v) anchor points/attachment locations
   vi) sling angles
   vii) machine capacity/load chart
   viii) obstacles
   ix) application

7. Identify types of materials to be moved and describe their characteristics and applications.
   i) pallets
   ii) totes
   iii) equipment
   iv) barrels
   v) deadstock

8. Perform calculations to confirm capacity of equipment and load characteristics.
   i) load distribution
   ii) maximum load

9. Describe communication methods used during lifting and moving materials.
   i) standard crane and hoist hand signals
   ii) two-way radios
   iii) video
   iv) radio
   v) mobile phones

10. Describe the procedures used to perform a basic lift.

11. Describe the procedures used to load, move and unload materials.

12. Describe the procedures used to inspect, store and maintain lifting and moving equipment.

Practical Objectives:

N/A

MENT-700 Mentoring I (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of effective communication practices as a learner.
- Demonstrate knowledge of strategies to assist in learning skills in the workplace.

Nova Scotia Occupational Standard Reference:

3.01 Uses communication techniques.
3.02 Uses mentoring techniques.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Describe the importance of one's own individual experiences.

2. Identify behaviours that demonstrate positive learning experiences.

3. Identify the benefits of workplace mentoring for the apprentice, mentor, and employer.

4. Identify the partners involved in apprenticeship training.

5. Describe the shared responsibilities for workplace learning in apprenticeship.

6. Identify different learning needs and strategies to address challenges or barriers in the workplace.
   i) learning disabilities
   ii) language
   iii) underrepresentation

7. Identify the components that create a positive and inclusive workplace culture.
   i) workplace characteristics
   ii) individual behaviours

8. Identify various learning styles and determine one’s own learning preferences.

9. Explain how learning preferences impact learning new skills.

10. Identify different learning strategies to meet individual learning needs.

11. Describe the importance of adapting to a variety of teaching and learning methods in the workplace.

12. Identify techniques for effective communication as a learner.
    i) verbal and non-verbal
    ii) active listening

13. Identify and describe personal responsibilities and attitudes that contribute to on-the-job success.
    i) self advocating
    ii) asking questions
    iii) accepting constructive feedback
    iv) working safely
    v) employing time management techniques and being punctual

Practical Objectives:

N/A

FRM-140 Farm Equipment (18 hrs)

Learning Outcomes:

- Demonstrate knowledge of farm equipment, their applications and procedures for use.
- Demonstrate knowledge of attachments and implements, their applications and procedures for use.
- Demonstrate knowledge of procedures to inspect, maintain and store farm equipment.

Nova Scotia Occupational Standard Reference:

4.01 Uses farm equipment.
4.02 Maintains farm equipment.

Suggested Hours:

18 hours

Theoretical Objectives:

1. Define terminology associated with farm equipment.

2. Identify hazards and describe safe work practices pertaining to farm equipment.

3. Interpret codes, regulations and standards pertaining to farm equipment.
   i) OH&S Act
   ii) Motor Vehicle Act – Transportation Legislation
      - Weight over 4500 kg (Condition 15)
      - Weight over 14000 kg (Condition 23)
   iii) Transportation Guideline for Nova Scotia Farmers

4. Interpret information pertaining to farm equipment found in owner's manuals.

5. Identify types of farm equipment and describe their characteristics, applications and procedures for use.
   i) powered farm equipment
      - tractors
      - forklifts
      - skid steers
      - pallet jacks
      - lifting devices
      - irrigation equipment
      - milking parlour
      - greenhouse seeders

ii) hand-held farm equipment
    - pruners
    - knives
    - hoes
    - rakes
    - shovels

6. Identify types of attachments and implements and describe their characteristics, applications and procedures for use.
    i) tillers
    ii) planters
    iii) harvesters
    iv) sprayers

7. Describe procedures used to inspect, maintain and store farm equipment, attachments and implements.
    i) inspect
        - worn, damaged or defective
        - pre operation
        - post operation
    ii) wash
    iii) sterilize
    iv) repair
        - completed by farm technician
        - requiring certified service technician
    v) document

Practical Objectives:

N/A

FRM-145 Grounds and Access Points (3 hrs)

Learning Outcomes:

- Demonstrate knowledge of farm grounds and access points.
- Demonstrate knowledge of the procedures to maintain farm grounds and access points.

Nova Scotia Occupational Standard Reference:

5.01 Maintains farm grounds and access points.

Suggested Hours:

3 hours

Theoretical Objectives:

1. Define terminology associated with farm grounds and access points.

2. Identify hazards and describe safe work practices pertaining to farm grounds and access points.

3. Interpret regulations and standards pertaining to grounds and access points.

4. Identify tools and equipment pertaining to farm grounds and access points and describe their applications and procedures for use.
   i) landscape
   ii) snow removal
   iii) fencing

5. Identify types of farm grounds and access points and describe their characteristics and applications.
   i) building perimeters
   ii) landscape
   iii) roadways
   iv) laneways
   v) entrances
   vi) parking areas
   vii) drains
   viii) fencing
   ix) signage

6. Describe the procedures used to maintain farm grounds and access points.
    i) mowing
    ii) pruning
    iii) snow and ice removal
    iv) cleaning and clutter removal

Practical Objectives:

N/A

FRM-150 Farm Infrastructure (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of farm infrastructure.
- Demonstrate knowledge of the procedures to maintain farm infrastructure.

Nova Scotia Occupational Standard Reference:

5.02 Performs routine maintenance to farm infrastructure.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with farm infrastructure.

2. Identify hazards and describe safe work practices pertaining to farm infrastructure.

3. Interpret codes, regulations and standards pertaining to farm infrastructure
   i) Occupational Health and Safety (OH&S)
   ii) Environmental Farm Plan

4. Identify tools and equipment pertaining to farm infrastructure and describe their applications and procedures for use.
   i) hand
   ii) power
   iii) air
   iv) pneumatic
   v) ladders
   vi) fall protection
   vii) confined space
   viii) pest control

5. Identify types of farm infrastructure and describe their characteristics and applications.
   i) buildings
      - employee residences
      - washrooms and welfare areas
      - waste storage facilities
   ii) fences and barriers

iii) roadways
iv) storage tanks and pits
    - feed
    - water
    - fuel
    - manure
v) systems and programs
    - power
        - overhead and underground electrical feeds
        - electrical panels
        - generators
    - heating, ventilation and air conditioning
    - security
    - biosecurity
    - pest and wildlife control
    - water and feed

6. Describe the general maintenance procedures used to maintain farm infrastructure
    i) plumbing
    ii) electrical
    iii) carpentry
    iv) welding
    v) painting
    vi) cleaning
    vii) fencing
    viii) snow and debris removal
    ix) pest control
        - identification
        - damage and risk assessment
        - control measures
    iv) documentation

7. Perform calculations to determine required materials for maintenance on farm infrastructure.

Practical Objectives:

1. Calculate materials needed for maintenance.

FRM-155 Record Keeping (15 hrs)

Learning Outcomes:

- Demonstrate knowledge of record keeping.
- Demonstrate knowledge of analyzing, interpreting and communicating information and results from records.
- Demonstrate knowledge of software and programs for record keeping and analysis.

Nova Scotia Occupational Standard Reference:

6.01 Performs record keeping.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with record keeping.

2. Interpret regulations and standards pertaining to record keeping.
   i) Safe Food for Canadian Act and Regulations
   ii) On Farm Food Safety Standards for specific commodity groups
   iii) Animal Care Programs

3. Identify types of documentation and describe their characteristics and applications.
   i) receiving and shipping
   ii) input tracking
   iii) production
   iv) calibrations
   v) treatments
      - pesticides
      - fertilizers
      - soil amendments
      - animal medications
   vi) quality control and assurance
      - traceability
      - animal care programs
      - food safety
   vii) water
   viii) OH&S
   ix) maintenance and service

x) certificates
   - training
   - qualifications
   - 3rd party accreditation

4. Identify types of record keeping software and programs and describe their applications and procedures for use.
   i) accounting
   ii) herd and flock management
   iii) crop management
   iv) inventory
   v) office suites
   vi) point of sale (POS)
   vii) document control
   viii) electronic and hard copy

5. Describe the procedures used to analyze and interpret results to make operational decisions.

6. Identify methods for communicating results with farm managers and team.

Practical Objectives:

1. Use spreadsheets to perform record keeping and basic functions.

FRM-160 Food Safety (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of on-farm food safety programs.
- Demonstrate knowledge of food safety documentation and record keeping.
- Demonstrate knowledge of food safety, management practices and continuous improvement.

Nova Scotia Occupational Standard Reference:

6.02 Practices on-farm food safety and animal care programs.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with food safety.

2. Identify hazards and describe safe work practices pertaining to food safety.
   i) biological
   ii) chemical
   iii) physical

3. Interpret regulations and standards pertaining to food safety.
   i) Safe Food for Canadians Act and Regulations
   ii) On Farm Food Safety Standards for specific commodity groups:

4. Describe the procedures used to record food safety data and maintain the required supporting documentation.

5. Describe the procedures used to maintain on-farm food safety.

6. Identify food safety deviations, corrective action and preventative measures.

7. Describe the necessity of food safety and identify the benefits of internal and external audits.

8. Describe the culture of food safety, traceability and continuous improvement.

Practical Objectives:

N/A

FRM-165 Animal Care (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of on-farm animal care programs.
- Demonstrate knowledge of animal traceability and documentation.
- Demonstrate knowledge of animal health, welfare, management practices and continuous improvement.

Nova Scotia Occupational Standard Reference:

6.02 Practices on-farm food safety and animal care practices.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with animal care.

2. Identify hazards and describe safe work practices pertaining to animal care.
   i) biological
   ii) chemical
   iii) physical

3. Interpret regulations and standards pertaining to animal care.
   i) Health of Animals Act
   ii) Safe Food for Canadians Act (Division 7 Meat Products and Food Animals; Subdivision C – Humane Treatment)
   iii) Canadian Food Inspection Agency Act (Administration and enforcement of Health of Animals Act, Safe Food for Canadians Act)
   iv) National Farm Animal Care Council (NFACC) Codes of Practice for the care and handling of farmed animals (for specific commodity groups)
   v) On Farm Animal Care Standards for specific commodity groups

4. Describe the necessity of animal care programs and the benefits of regular inspection and audits from regulatory boards.

5. Describe the procedures and industry protocols used to maintain animal care to meet and surpass animal care and welfare standards.

6. Describe the procedures used to record animal care data and the required documentation for animal care programs.

7. Describe the procedures used to maintain traceability with animal care programs.

8. Perform calculations on stocking density pertaining to animal care.

9. Describe livestock health and welfare indicators pertaining to animal care programs.

10. Describe the procedures used to interpret air quality and environmental conditions measurements pertaining to animal care program requirements.

11. Describe the culture of animal care and continuous improvement.

Practical Objectives:

1. Calculate stocking densities.

FRM-170 Production Site Preparation (3 hrs)

Learning Outcomes:

- Demonstrate knowledge of production sites and their characteristics.
- Demonstrate knowledge of procedures to prepare sites for production.
- Demonstrate knowledge of organizing and scheduling production to meet market demands.

Nova Scotia Occupational Standard Reference:

7.01 Prepares production site.

Suggested Hours:

3 hours

Theoretical Objectives:

1. Define terminology associated with production site preparation.

2. Identify hazards and describe safe work practices pertaining to production site preparation.

3. Identify tools and equipment pertaining to production site preparation and describe their applications and procedures for use.

4. Identify types of production sites and describe their characteristics and applications.
   i) barn
   ii) field
   iii) greenhouse
   iv) lot
   v) yard
   vi) grove
   vii) orchard
   viii) pasture
   ix) bog

5. Describe the procedures used to prepare a site for production.
   i) cleaning and sanitizing
   ii) clearing site of materials, debris and garbage
   iii) tillage, mowing and land clearing

6. Identify market demands and regulations pertaining to products.

7. Describe production systems and tasks to be performed.

8. Identify production schedules based on supply and demand targets.

Practical Objectives:

N/A

FRM-175 Production Monitoring (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of procedures to monitor production.
- Demonstrate knowledge of procedures to sample and analyze data.

Nova Scotia Occupational Standard Reference:

7.04 Monitors production.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with production monitoring.

2. Identify hazards and describe safe work practices pertaining to production monitoring.
   i) personal safety
   ii) livestock safety
   iii) food safety

3. Identify tools and equipment pertaining to production monitoring and describe their applications and procedures for use.

4. Identify reasons and conditions for taking crop samples.

5. Describe the procedures used to monitor production.
   i) test inputs, production site and products
   ii) sample techniques
   iii) sample timing
   iv) sample size
   v) handling and storage of samples
   vi) collection of ongoing production data
   vii) interpreting results and production decisions

6. Identify types of samples and describe their characteristics and applications.
   i) feed and supplements
   ii) soil
   iii) organic amendments

- animal manure
- compost
- other waste or byproducts (wood ash, shellfish waste)

iv) water
- livestock water
- irrigation water

v) tissue
- plant
- animal

7. Describe the procedures used to interpret sample results and make production decisions.

Practical Objectives:

N/A

FRM-180 Crop Health (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of managing crop health.
- Demonstrate knowledge of environmental conditions that affect crop health.

Nova Scotia Occupational Standard Reference:

7.05 Maintains crop health.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with crop health.

2. Identify hazards and describe safe work practices pertaining to crop health.

3. Identify tools and equipment pertaining to crop health and describe their applications and procedures for use.

4. Identify methods used to monitor crop health.
   i) integrated pest management (IPM)
   ii) soil nutrient management
   iii) fertigation plan
   iv) scouting
   v) tissue and sap samples

5. Identify crop health indicators and describe their purpose and implications.
   i) moisture levels
   ii) crop appearance
      - nutrient deficiency symptoms
      - moisture stress
      - insect damage
      - disease symptoms

6. Identify types of environmental conditions and describe their characteristics and implications on crop health.
   i) temperature

ii) humidity
iii) rainfall
iv) sunlight
v) weather
vi) carbon dioxide (CO_2) levels
vii) heat units
viii) pH
ix) electrical conductivity (EC)

Practical Objectives:

N/A

FRM-185 Livestock Health (12 hrs)

Learning Outcomes:

- Demonstrate knowledge of livestock health programs.
- Demonstrate knowledge of livestock health, welfare, management practices and continuous improvement.

Nova Scotia Occupational Standard Reference:

7.06 Maintains livestock health.

Suggested Hours:

12 hours

Theoretical Objectives:

1. Define terminology associated with livestock health.

2. Identify hazards and describe safe work practices pertaining to livestock health.

3. Interpret regulations and standards pertaining to livestock health.
   i) Livestock Health Services Act
   ii) Animal Health and Protection Act

4. Identify tools and equipment pertaining to livestock health and describe their applications and procedures for use.

5. Identify methods used to monitor livestock health and describe their characteristics and applications.
   i) herd health and vet checks
   ii) vaccinations
   iii) pest control
   iv) animal safety
   v) tissue sample analysis

6. Identify livestock health and welfare indicators and describe their characteristics and implications.
   i) lameness
   ii) feathering
   iii) temperature
   iv) deadstock

v) respiration rate
vi) rumination
vii) injury
viii) abnormal behaviour
ix) off feed
x) reproduction issues

7. Describe the procedures and best practices to monitor animal health and welfare.

8. Describe the procedures used to monitor air quality and environmental conditions.

Practical Objectives:

N/A

FRM-190 Pest Management (12 hrs)

Learning Outcomes:

- Demonstrate knowledge of pests, their characteristics and damaging effects.
- Demonstrate knowledge of procedures to manage pests.
- Demonstrate knowledge of an integrated pest management program.

Nova Scotia Occupational Standard Reference:

7.07 Controls pests.

Suggested Hours:

12 hours

Theoretical Objectives:

1. Define terminology associated with pest management.

2. Identify hazards and describe safe work practices pertaining to pest management.
   i) personal safety
   ii) livestock safety
   iii) food safety
   iv) environmental protection

3. Interpret regulations and standards pertaining to pest management.
   i) Acts & Regulations
      - Pest Control Products Act
      - Transportation of Dangerous Goods Act
      - Canada Labour Code
      - Food and Drugs Act
      - Migratory Birds Convention Act
      - Fisheries Act
      - Fertilizers Act
      - Environment Act
   ii) Training and Certification
      - Pesticide Applicator Certification

4. Identify tools and equipment pertaining to pest management and describe their applications and procedures for use.

5. Identify types of pests and describe their characteristics and damaging effects.

i) insects and mites
ii) weeds
iii) diseases
iv) nuisance wildlife

6. Identify scouting aids and accessories and describe their purpose and operation.
   i) traps
   ii) weather stations
   iii) combs

7. Explain the principles and components of an integrated pest management program.
   i) prevention
   ii) identification
   iii) monitoring/scouting
   iv) action threshold
   v) management options/control methods
   vi) evaluation

8. Identify methods used to manage pests and describe their characteristics and applications.
   i) cultural/preventative
      - resistant varieties
      - crop rotation
      - pruning
      - plant nutrition
      - sanitation
   ii) physical
      - barriers
      - screens/nets
      - traps
      - mulches
      - hot-water weeders
   iii) mechanical
      - vacuum
      - flame
      - cut
      - tillage
   iv) biological
      - predatory and parasitic insects
      - beneficial nematodes
      - microbial controls
   v) chemical/pesticides
      - field/outdoor
        - equipment mounted and hand-held sprayers
        - furrow liquid and granular planting equipment

- greenhouse
- livestock
- structural
- nuisance wildlife

9. Describe the procedures used to manage pests.
   i) implement scouting aids
   ii) identify pest
   iii) action threshold
   iv) determine control method
   v) implement control
   vi) monitor and adjust effectiveness
   vii) resistance management
   viii) clean up and store products

Practical Objectives:

N/A

FRM-195 Environmental Stewardship (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of environmental stewardship and best practices in agriculture production.
- Demonstrate knowledge of procedures used to mitigate risks of environmental contamination.

Nova Scotia Occupational Standard Reference:

1.03 Protects the environment.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with environmental stewardship.

2. Identify hazards and describe safe work practices pertaining to environmental stewardship.

3. Interpret regulations, standards and programs pertaining to environmental stewardship.
   i) Environment Act
   ii) Transportation of Dangerous Goods Act
   iii) Environmental Farm Plan Program
   iv) Manure Management Guidelines

4. Identify the principles and elements of environmental stewardship and describe their characteristics and applications.
   i) soil
      - soil health
      - soil conservation practices
      - soil testing analysis
   ii) water
      - water conservation
      - protection of water sources and courses
        - riparian zones
        - runoff
   iii) air
      - quality
      - drift

- nuisance odours

5. Identify resources that need to be managed and describe procedures used to mitigate environmental risks.
   i) water sources
   ii) nutrients
   iii) manure
   iv) pesticides
   v) waste disposal
   vi) fuel
   vii) feed
   viii) equipment and materials
   ix) soils and tillage practices
   x) energy use
   xi) wildlife
   xii) agriculture practices adjacent to residential or public sites

Practical Objectives:

N/A

Level 2
4 Weeks (120 hours)

MENT-701 Mentoring II (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of effective communication practices as a mentor.
- Demonstrate knowledge of strategies for teaching workplace skills.

Nova Scotia Occupational Standard Reference:

3.02 Uses mentoring techniques.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Identify the different roles played by a workplace mentor.

2. Identify strategies to create a supportive learning environment.

3. Identify techniques for effective communication as a mentor.
   i) constructive feedback
   ii) active listening
   iii) leading meetings and one-on-one sessions

4. Describe the steps in teaching a skill.
   i) identifying the point of lesson
   ii) linking the lesson
   iii) demonstrating the skill
   iv) providing practice
   v) giving feedback
   vi) assessing skill and progress

5. Identify strategies to assist in teaching a skill while meeting individual learning needs.
   i) principles of instruction
   ii) coaching skills

6. Explain how to adjust a lesson for various situations.

Practical Objectives:

N/A

FRM-205 Material Handling Equipment (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of material handling equipment, their applications, maintenance and procedures for use.

Nova Scotia Occupational Standard Reference:

4.03 Operates material handling equipment.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with material handling equipment.

2. Identify hazards and describe safe work practices pertaining to material handling equipment.

3. Interpret, regulations and standards pertaining to material handling equipment.
   i) Occupational Health & Safety (OH&S)

4. Interpret information pertaining to material handling equipment found in owner's manuals.

5. Identify types of material handling equipment and describe their characteristics, applications and procedures for use.
   i) augers
   ii) conveyors
   iii) gravity boxes
   iv) pumps
   v) blowers
   vi) vacuums

6. Perform calculations on volume and density of material.

7. Describe the procedures used to operate and adjust material handling equipment.

8. Describe the procedures used to maintain and store material handling equipment.

Practical Objectives:

1. Calculate volume and density of material.

FRM-210 Automated Equipment (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of automated equipment, their applications maintenance and procedures for use.

Nova Scotia Occupational Standard Reference:

4.04 Operates automated equipment.

Suggested Hours:

3 hours

Theoretical Objectives:

1. Define terminology associated with automated equipment.

2. Identify hazards and describe safe work practices pertaining to automated equipment.

3. Interpret regulations and standards pertaining to automated equipment.
   i) Occupational Health and Safety (OH&S)

4. Interpret information pertaining to automated equipment found in owner's manuals.

5. Identify tools and equipment pertaining to automated equipment and describe their applications and procedures for use.

6. Identify types of automated equipment and describe their characteristics, applications and procedures for use.
   i) processing and packaging line
   ii) environmental control systems
   iii) automatic feeders
   iv) robotics
   v) palletizer
   vi) stacker
   vii) HVAC systems
   viii) alarm systems

7. Identify automated equipment components and describe their purpose and operation.
   i) programmable logic controllers

8. Describe the procedures used to read and interpret data from automated equipment.

9. Describe the procedures used to operate, troubleshoot and adjust automated farm equipment.

10. Describe the procedures used to inspect, maintain and store automated farm equipment.

Practical Objectives:

N/A

FRM-215 Seeding and Application Equipment (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of seeding and application equipment, their applications, maintenance and procedures for use.

Nova Scotia Occupational Standard Reference:

4.05 Operates seeding and application equipment.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with seeding and application equipment.

2. Identify hazards and describe safe work practices pertaining to seeding and application equipment.

3. Interpret regulations and standards pertaining to seeding and application equipment.
   i) Occupational Health and Safety (OH&S)
   ii) Pesticide Applicators License
   iii) Transportation and Dangerous Goods
   iv) Driver License Requirements and Endorsements

4. Interpret information pertaining to seeding and application equipment found in owner's manuals.

5. Identify types of seeding and application equipment and describe their characteristics, applications and procedures for use.
   i) sprayers
   ii) seeders
   iii) spreaders
   iv) planters
   v) medicators
   vi) injectors
   vii) irrigation systems
   viii) foggers

6. Identify types of materials applied during production and describe their characteristics and application.
   i) manures
   ii) fertilizers
   iii) pH additives
   iv) seed
   v) biological controls
   vi) pesticide
   vii) inoculants
   viii) fumigants

7. Perform calculations to determine seed and application requirements.

8. Describe the procedures used and the variables to consider when calibrating seeding and application equipment.
   1. verify calibration
   2. impacts of over and under application
   3. weather conditions
   4. soil conditions and incorporation
   5. equipment and mixing procedures

9. Describe the procedures used to document and maintain application records.

10. Describe the procedures used to inspect, maintain and store seeding and application equipment

Practical Objectives:

1. Calculate seeding and application rates.

FRM-220 Water Management (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of water sources and quality management.
- Demonstrate knowledge of water systems, their applications and management.
- Demonstrate knowledge of water treatment methods.

Nova Scotia Occupational Standard Reference:

5.03 Manages farm water.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with water management.

2. Identify hazards and describe safe work practices pertaining to water management.

3. Interpret regulations and standards pertaining to water management.
   i) Health Canada Guidelines for Canadian Drinking Water Quality
   ii) Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
   iii) Nova Scotia On-Farm Food Safety

4. Identify tools and equipment pertaining to water management and describe their applications and procedures for use.
   i) water test kit

5. Identify types of water sources and describe their characteristics and applications.
   i) wells
   ii) municipal
   iii) ponds
   iv) streams
   v) rivers
   vi) farmyard water

6. Describe types of water systems and the procedures used to inspect and maintain them.
   i) input
   ii) output
   iii) recirculation

iv) storage

7. Identify farm water requirements and describe their purpose and applications.
   i) irrigation
   ii) misting and humidification
   iii) pesticide applications
   iv) fluming, washing, cleaning of produce
   v) livestock
   vi) building and equipment cleaning
   vii) drinking water
   viii) fire

8. Describe the procedures used to obtain a water sample and interpret the results.

9. Identify signs and causes of contaminated water sources and describe methods of remediation.

10. Describe the procedures used to manage wastewater.

11. Identify water treatment methods and describe their associated procedures.
    i) filtration
    ii) UV
    iii) chemical
    iv) reverse osmosis
    v) medication

Practical Objectives:

1. Read a water analysis and interpret recommendations.

FRM-225 Job Planning (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of job planning.
- Demonstrate knowledge of organizing supplies and resources to complete jobs.
- Demonstrate knowledge of coordinating production jobs with co-workers.

Nova Scotia Occupational Standard Reference:

6.03 Plans projects and tasks.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with job planning.
   i) scheduling
   ii) project coordination
   iii) timeline
   iv) project scope
   v) project budget

2. Identify hazards and describe safe work practices pertaining to job planning.

3. Identify tools and equipment pertaining to job planning and describe their applications and procedures for use.

4. Describe factors to consider when job planning to determine job requirements.
   i) consumables
   ii) parts
   iii) supplies
   iv) equipment
   v) PPE
   vi) labour

5. Describe the procedures used in job planning.

6. Identify components of job budgets and describe the methods used to manage expenses.

7. Describe the procedures used to determine timelines and required resources for job completion.

8. Identify means of job coordination with co-workers and methods to monitor and follow up progress.

9. Identify methods of job follow up and evaluation and describe their characteristics and applications.

Practical Objectives:

N/A

FRM-230 Human Resources (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of human resources.
- Demonstrate knowledge of creating a culture of accountability.
- Demonstrate knowledge of leadership tools and skills.

Nova Scotia Occupational Standard Reference:

6.04 Performs human resource leadership.
6.05 Performs human resource tasks.

Suggested Hours:

9 hours

Theoretical Objectives:

1. Define terminology associated with human resources.

2. Identify hazards and describe safe work practices pertaining to human resources.

3. Interpret regulations and standards pertaining to human resources.
   i) Labour Standards Code

4. Identify types of human resource documentation and records and describe their characteristics and application.
   i) time sheets
   ii) incident reports
   iii) progressive discipline
   iv) Temporary Foreign Worker program
   v) orientation records
   vi) training certificates

5. Describe the elements of an equitable, diverse and inclusive work environment.
   i) accessible
   ii) respectful
   iii) safe
   iv) culturally sensitive
   v) non-biased

6. Identify tools and skills pertaining to leadership in the workplace and describe their applications and procedures for use.

7. Describe leadership core competencies and accountability and identify strategies to integrate this into the workplace.

8. Identify ways to demonstrate cultural sensitivity and describe their characteristics and applications.

9. Describe the procedures used to interview a labour candidate.

10. Describe the procedures used to provide inclusive training opportunities and implementation in the workplace.

11. Identify methods of creating open communication opportunities for evaluation and monitoring of employee performance.

12. Describe the procedures used to create and manage employee schedules.

Practical Objectives:

N/A

FRM-235 Input Inventory and Production Planning (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of input inventory and production planning.
- Demonstrate knowledge of procedures to maintain input inventory and plan production.
- Demonstrate knowledge of implementing production plans and managing production sites.

Nova Scotia Occupational Standard Reference:

7.02 Maintains input inventory.
7.03 Implement production plan.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with input inventory and production planning.

2. Identify hazards and describe safe work practices pertaining to input inventory and production planning.
   i) personal safety
   ii) livestock safety
   iii) food safety

3. Interpret regulations and standards pertaining to input inventory and production planning.
   i) products registered and labelled for planned use
   ii) maximum residual limits for pesticides
   iii) livestock housing standards
   iv) environmental regulations

4. Identify tools and equipment pertaining to input inventory and production plans and describe their applications and procedures for use.

5. Identify types of production inputs and describe their characteristics, applications and procedures for use.
   i) semen
   ii) feed/supplements
   iii) seeds
   iv) nutrients and fertilizer
   v) biological inputs - supplements and pest controls

vi) pesticides
vii) chemicals
viii) medications
ix) bedding
x) trellis
xi) manure
xii) compost
xiii) water
xiv) fencing
xv) livestock housing

6. Describe the procedures used to manage production inputs and implement production plans.
   i) prepare lists that comply with regulations
   ii) identify suppliers and lead time for delivery
   iii) work within a budget
   iv) perform calculations to determine input needs
   v) maintain inventory and input supplies
   vi) ensure proper storage of input supplies to meet regulations and maintain quality
   vii) rotate supplies and avoid resistance buildup
   viii) identify obsolete and expired supplies
   ix) apply and distribute inputs
   x) manage production site
   xi) monitor production inputs

Practical Objectives:

N/A

FRM-240 Harvest and Collection (9 hrs)

Learning Outcomes:

- Demonstrate knowledge of harvest and collection practices.
- Demonstrate knowledge of harvest and collection equipment and preparing them for harvest.
- Demonstrate knowledge of harvest targets, schedule preparation and organizing labour for harvest and collection.
- Demonstrate knowledge of environmental conditions and product readiness for harvest and collection.
- Demonstrate knowledge of collecting, grading and transporting product to secondary facilities.

Nova Scotia Occupational Standard Reference:

8.01 Prepares for harvest and collection.
8.02 Performs harvest and collection.

Suggested Hours:

9 hours

Theoretical Objectives:

1. Define terminology pertaining to harvest and collection.

2. Identify hazards and describe safe work practices pertaining to harvest and collection.

3. Interpret regulations and standards pertaining to harvest and collection.
   i) Canadian Food Safety Standards and Guidelines

4. Identify tools and equipment pertaining to harvest and collection and describe their applications and procedures for use.
   i) belts and conveyors
   ii) harvesters
   iii) robots
   iv) harvesting tools
   v) packaging materials
   vi) milking equipment
   vii) bins and trays
   viii) pipelines
   ix) hoses and flumes

x) storage tanks

5. Describe the procedures used to prepare tools and equipment for harvest and collection.
   i) inspect
   ii) adjust
   iii) clean
   iv) disinfect

6. Perform calculations pertaining to harvest and collection.

7. Identify harvest targets, collection schedules and labour requirements for harvest and collection.

8. Describe environmental conditions necessary for harvest and collection and apply them to scheduling.

9. Identify indicators pertaining to product readiness and describe their characteristics and applications.
   i) moisture tests
   ii) firmness and texture
   iii) weight
   iv) size
   v) colour
   vi) chemical analysis
   vii) appearance
   viii) health
   ix) documentation
   x) maturity

10. Describe the procedures used to control mechanical damage and maintain quality during harvest and collection.

11. Describe methods to schedule and supervise labour during harvest and collection.

12. Describe the characteristics and procedures used to sort and grade product at the production site.
   i) bruising
   ii) foreign materials contamination
   iii) cracks
   iv) plant damage
   v) injury
   vi) defects
   vii) maturity

13. Describe the procedures used to prepare and transport products to secondary facilities.

Practical Objectives:

1. Perform calculations to determine harvest yield.

FRM-245 Waste Management (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of farm waste management.
- Demonstrate knowledge of procedures to manage and recyclable crop and animal waste.
- Demonstrate knowledge of procedures to manage dead stock.

Nova Scotia Occupational Standard Reference:

1.03 Protects the environment.
8.03 Manages production waste.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with farm waste management.

2. Identify hazards and describe safe work practices pertaining to waste management.

3. Interpret regulations and standards pertaining to waste management.
   i) Environment Act
   ii) Manure Management Guidelines
   iii) Nova Scotia Environmental Farm Plan

4. Identify tools and equipment pertaining to waste management and describe their applications and procedures for use.

5. Identify types of waste and describe their characteristics and applications for management.
   i) recyclable waste
      - metal
      - paper
      - plastic
      - chemical containers
   ii) crop waste
      - culls
      - grading line residue
      - expired product
      - spoiled product
      - production materials

iii) animal waste
   - manure
   - litter
   - feed waste
   - offal
   - bedding
   - animal tissue
   - spoiled product

iv) landfill waste
v) dead stock

Practical Objectives:

N/A

FRM-250 Post-Harvest Management (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of post-harvest management.
- Demonstrate knowledge of preparing and storing product post-harvest.
- Demonstrate knowledge of monitoring and maintaining storage conditions.
- Demonstrate knowledge of managing product inventory.

Nova Scotia Occupational Standard Reference:

8.04 Stores product.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology associated with post-harvest management.

2. Identify hazards and describe safe work practices pertaining to post-harvest management.

3. Interpret regulations and standards pertaining to post-harvest management.
   i) Canadian Food Safety Standards and Guidelines

4. Identify tools and equipment pertaining to post-harvest management and describe their applications and procedures for use.
   i) bin pilers
   ii) box fillers
   iii) conveyors
   iv) dirt eliminators

5. Identify types of product storage and describe their characteristics and applications.
   i) bins
   ii) tanks
   iii) controlled atmosphere
   iv) refrigeration
   v) vacuum coolers
   vi) hydro coolers
   vii) warehouses

6. Describe the procedures used to prepare product for post-harvest storage.

i) wax
ii) cure
iii) ethylene inhibitors
iv) dry
v) control atmosphere
vi) pre-cool
vii) cool
viii) freeze
ix) clean

7. Describe the procedures used to load product into storage and manage product inventory.

8. Describe the procedures used to monitor, maintain and adjust storage conditions during post-harvest management.
   i) environment
   ii) sanitation
   iii) hazards
   iv) pests
   v) diseases
   vi) indoor storage
   vii) outdoor storage

Practical Objectives:

N/A

FRM-255 Market Preparation (6 hrs)

Learning Outcomes:

- Demonstrate knowledge of market preparation.

Nova Scotia Occupational Standard Reference:

8.05 Prepares product for market.

Suggested Hours:

6 hours

Theoretical Objectives:

1. Define terminology pertaining to market preparation.

2. Identify hazards and describe safe work practices pertaining to market preparation.

3. Interpret regulations and standards pertaining to market preparation.
   i) Canadian Food Safety Standards and Guidelines

4. Identify tools and equipment pertaining to market preparation and describe their applications and procedures for use.
   i) sizers
   ii) inspection lines
   iii) optical sorters
   iv) bin dumpers
   v) vibrating tables
   vi) ultrasound
   vii) weighers
   viii) baggers
   ix) box fillers
   x) palletizers
   xi) box makers
   xii) cappers
   xiii) pallet strappers
   xiv) fill stations
   xv) egg collection systems
   xvi) tree balers

5. Identify types of product preparation and describe their characteristics and applications.
   i) washing
   ii) grading
   iii) packaging
   iv) labelling
   v) palletizing
   vi) shipping

6. Describe quality indicators used to grade product in preparation for market.
   i) length and diameter
   ii) colour
   iii) weight
   iv) quality
   v) size
   vi) internal defects
   vii) external defects
   viii) maturity

Practical Objectives:

N/A

FRM-260 Program Review (30 hrs)

Learning Outcomes:

- Demonstrate knowledge of the Occupational Standard and its relationship to the Certification Examination.
- Demonstrate knowledge of overall comprehension of the trade in preparation for the Certification Examination.

Occupational Standard Reference:

Entire Occupational Standard

Suggested Hours:

30 hours

Theoretical Objectives:

1. Define and explain terminology associated with an NSOS.
   i) major work activities (MWA)
   ii) tasks
   iii) sub-tasks

2. Explain how an NSOS is developed and the link it has with the Certification Examination.
   i) development
   ii) validation
   iii) MWA and task weighting
   iv) examination breakdown (pie-chart)

3. Identify exam preparation resources and products and describe their use for preparing for the Certification Examination.
   i) Red Seal and Agency websites
   ii) examination preparation guide
   iii) self-assessment guides
   iv) exam breakdowns/counselling sheets
   v) sample questions

4. Explain the relationship between the NSOS and the Curriculum Standard.

5. Review common occupational skills for the Farm Technician trade as identified in the NSOS.
   i) safety-related functions
   ii) tools and equipment

iii) communication and mentoring

6. Review process to perform routine work practices for the Farm Technician trade as identified in the NSOS.
   ii) operate and maintain farm equipment
   iii) maintain facilites, grounds and infrastructure
   iv) perform farm management practices

1. Review process to manage production for the Farm Technician trade as identified in the NSOS.
   i) perform production tasks
   ii) prepare products for sale or distribution

Practical Objectives:

N/A

Feedback and Revisions

This curriculum standard will be amended periodically; comments or suggestions for improvements should be directed to:

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Any comments or suggestions received will be reviewed and considered to determine the course of action required. If the changes are deemed to be minor, they will be held for implementation during the next review cycle. If immediate change is deemed appropriate, it will result in a revision to this version of the curriculum standard and will be detailed in the following section.

Version Changes

Revision Date	Revision	Implementation Date
May 2024	Levels 1 and 2	Integration of MENT-700 Mentoring I and MENT-701 Mentoring II