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AGRICULTURE AND FISHERIES

DAIRY PRODUCTION

PROGRAM OF STUDY

5667

VOCATIONAL and TECHNICAL EDUCATION

020801
6998003

Québec

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AGRICULTURE AND FISHERIES

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The *Dairy Production* program leads to the

Secondary School Vocational Diploma (SSVD)

and prepares the student to practise the trade of

SKILLED DAIRY PRODUCTION WORKER

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It has been approved by the confessional committees of the Conseil supérieur de l'éducation in conformity with the provisions of paragraph (a) of section 23 of the *Act respecting the Conseil supérieur de l'éducation* (R.S.Q., c. C-60), as replaced by section 569 of the *Education Act* (1988, chapter 84).

Pauline Marois
Minister of Education

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INTRODUCTION

The *Dairy Production* program is based on the orientations for secondary school vocational education adopted by the government in 1986. It was designed on the basis of a new framework for developing vocational education programs that calls for the participation of experts from the workplace and the field of education.

The program of study is developed in terms of competencies, expressed as objectives. These objectives are divided into modules, which are organized into teaching blocks. Various factors were kept in mind in developing the program: training needs, the job situation, purposes, goals, and strategies and means used to attain objectives.

The program of study lists the competencies that are the minimum requirements for a Secondary School Vocational Diploma (SSVD) for students in both the youth and adult sectors. It also provides the basis for organizing courses, planning teaching strategies, and designing instructional and evaluation materials.

The duration of the program is 1245 hours, which includes 675 hours spent on the specific competencies required to practise the trade and 510 hours on general competencies. The program of study is divided into 27 modules, which vary in length from 15 to 60 hours (multiples of 15). The time allocated to the program is to be used not only for teaching but also for evaluation and remedial work.

This document contains two parts. Part I is of general interest and provides an overview of the training plan. It includes a synoptic table of basic information about the modules, a description of the program training goals, the competencies to be developed and the general objectives, and an explanation of operational objectives. Part II is designed primarily for those directly involved in implementing the program. It contains a description of the operational objectives of each module.

In keeping with this broad approach, three accompanying documents will be provided: a teaching guide, an evaluation guide, and a planning guide.

GLOSSARY

Program Training Goals

Statements that describe the educational aims of a program. These goals are the general goals of vocational education adapted to a specific trade or occupation.

Competency

A set of socio-affective behaviours, cognitive skills or psycho-sensori-motor skills that enable a person to correctly perform a role, function, activity or task.

General Objectives

Instructional objectives that provide an orientation for leading the students to attain one or more related objectives.

Operational Objectives

Statements of the educational aims of a program in practical terms. They serve as the basis for teaching, learning and evaluation.

Module of a Program

A component part of a program of study comprising a first-level operational objective and the related second-level operational objectives.

Credit

A unit used for expressing quantitatively the value of the modules in a program of study. One credit corresponds to 15 hours of training. Students must accumulate a set number of credits to graduate from a program.

PART I

1. SYNOPTIC TABLE

Number of modules: 27
Duration in hours: 1245
Credits: 83

Dairy Production
CODE: 5667

CODE	TITLE OF THE MODULE	HOURS	CREDITS*
721 012	1. The Trade and the Training Process	30	2
721 023	2. Establishing Relationships among Farming Practices, the Environment, and Health and Safety	45	3
	3. Communicating in the Workplace		
721 032	4. Schools of Thought in Agriculture	30	2
721 042	5. Organizing the Technical Data Found in the	30	2
721 056	Registers of a Business	90	6
	6. Applying Concepts of Animal Anatomy and		
721 064	Physiology	60	4
	7. Milking Cows and Controlling Milk Quality		
721 073	8. Applying Health Care for Dairy Cattle	45	3
721 084	9. Applying Concepts of Genetics and Animal	60	4
721 093	Reproduction	45	3
	10. Applying Concepts of Animal Feeding		
721 103	11. Applying a Reproduction and Improvement	45	3
721 113	Program for Dairy Cattle	45	3
	12. Applying a Feeding Program for Dairy Cattle		
721 123	13. Applying Concepts of Plant Anatomy and Phy-	45	3
721 134	siology	60	4
	14. Using Pesticides		
721 142	15. Soil Preparation	30	2
721 154	16. Harvesting, Conditioning and Storing Crop	60	4
721 163	Production	45	3
	17. Applying Concepts of Fertilization and Condi-		
721 174	tioning	60	4
	18. Planting Crops		
721 183	19. Identifying Crop Pests	45	3
721 192	20. Maintaining Crops	30	2
721 202	21. Applying Concepts of Oxyacetylene Cutting	30	2
721 213	and Arc Welding	45	3
	22. Maintenance and Minor Repairs of Tools and		
721 224	Machinery	60	4
	23. Periodic Maintenance of Tractors		
721 234	24. Regular Building Maintenance	60	4
721 243	25. Job Search Techniques	45	3
721 251	26. Introduction to the Practice of the Trade	15	1
721 263	27. Entering the Work Force	45	3
721 273		45	3

* 15 hours = 1 credit
This program leads to an SSVD in Dairy Production

DIRECTION DES COMMUNICATIONS
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Québec, G1R 5A5

2. PROGRAM TRAINING GOALS

The training goals of the *Dairy Production* program are based on the general goals of vocational education and take into account the specific nature of the trade. These goals are:

To develop effectiveness in the practice of a trade.

- To prepare students to perform dairy production tasks and activities correctly and at a level of performance acceptable for entering the job market.

- To prepare students to perform satisfactorily on the job by fostering:
  - the development of the skills required to organize and plan their work;
  - the development of the basic skills required to carry out trade-related tasks such as arc and gas welding;
  - the application of basic concepts related to animal and plant physiology and anatomy, nutrition, genetics, fertilizers and conditioners;
  - the acquisition of the knowledge required to use computer systems;
  - the development of the ability to communicate in the workplace;
  - the acquisition of the basic knowledge required to identify crop pests and use pesticides;
  - a constant concern for the environment, health and safety;
  - observation and precision in carrying out tasks.

To ensure that students are prepared to enter the work force.

- To help students integrate into the job market by fostering:
  - knowledge of their rights and responsibilities as workers;
  - knowledge of the job market in general and dairy production in particular.

To foster personal development and the acquisition of occupational knowledge.

- To foster independence and a sense of responsibility.

- To help students develop a concern for excellence.

- To help students acquire good work habits.

To ensure job mobility.

- To help students develop a positive attitude toward technological change.

- To foster the ability to learn and to obtain information.

3. COMPETENCIES

The competencies to be developed in the *Dairy Production* program are shown in the grid of learning focuses on the following page. The grid lists general and specific competencies as well as the major steps in the work process.

General competencies involve activities common to several tasks or situations. They cover, for example, the technological or scientific principles that the students must understand to practise the trade or occupation. Specific competencies focus on tasks and activities that are of direct use in the trade or occupation. The work process includes the most important steps in carrying out the tasks and activities of the trade or occupation.

The grid of learning focuses shows the relationship between the general competencies on the horizontal axis and the specific competencies on the vertical axis. The symbol (△) indicates a correlation between a specific competency and a step in the work process. The symbol (○) indicates a correlation between a general and a specific competency.

The symbols (▲) and (•) indicate that these relationships have been taken into account in the formulation of objectives intended to develop specific competencies related to the trade or occupation.

The logic used in constructing the grid influences the course sequence. Generally speaking, this sequence follows a logical progression in terms of the complexity of the learning involved and the development of the students' autonomy. The vertical axis of the grid shows the competencies directly related to the practice of a specific trade or occupation. These competencies are arranged in a relatively fixed order; therefore, the modules should be taught, insofar as possible, in the order represented on the grid. The modules including the general competencies on the horizontal axis should be taught in relation to those on the vertical axis. This means that some modules are prerequisite to others, while other modules are taught concurrently.

GRID OF LEARNING FOCUSES

SKILLED WORKER

IN

DAIRY PRODUCTION

	SPECIFIC COMPETENCIES (directly related to the practice of the specific occupation)	FIRST-LEVEL OPERATIONAL OBJECTIVES	DURATION (IN HOURS)	WORK PROCESS (major steps)								GENERAL COMPETENCIES (related to technology, subjects, personal development, etc.)													TOTALS	
				Learn about objectives	Plan work	Prepare material	Do the task	Clean up and put away	Evaluate the quality of work done	Record data in various registers	Participate in the evaluation of performance with regard to the objectives of the enterprise	Establish relationships among farming practices, the environment, and health and safety	Communicate in the workplace	Recognize the schools of thought in agriculture	Organize technical data	Apply concepts of animal anatomy and physiology	Apply concepts of genetics and animal reproduction	Apply concepts of animal feeding	Apply concepts of plant anatomy and physiology	Use pesticides	Apply concepts of fertilization and conditioning	Identify crop pests	Apply concepts of oxyacetylene cutting and arc welding	Use job search techniques	NUMBER OF OBJECTIVES	DURATION (IN HOURS)
	MODULES											2	3	4	5	6	9	10	13	14	17	19	21	25	13	
	FIRST-LEVEL OCCUPATIONAL OBJECTIVES											B	S	S	B	B	B	B	B	B	B	B	B	B		
	DURATION											45	30	30	90	60	45	45	60	30	60	30	45	15		585
1	Determine their suitability for the trade and the training process	S	30	△	△		△		△			○	○	○	○	○	○	○	○	○	○	○	○	○		
7	Milk cows and control milk quality	B	45	▲	▲	▲	▲	▲	▲	▲	▲	●	○		●	●	○	●								
8	Apply health care for dairy cows	B	60	▲	▲	▲	▲	▲	△	▲	△	●	○	●	○	●	○	○		○						
11	Apply a reproduction and improvement program for dairy cattle	B	45	▲	△	△	▲	△	△	▲	△	○	○	○	○	●	●	○								
12	Apply a feeding program for dairy cattle	B	45	▲	▲	▲	▲	▲	△	▲	▲	●	○	●	●	●	○	●								
15	Prepare the soil	B	60	▲	▲	▲	▲	▲	▲	▲	▲	●	○	●	○				○	○	●		○	○		
16	Harvest, condition, and store crop production	B	45	▲	▲	▲	▲	▲	△	▲	△	●	○	○	●	○		○	●	○	○	○				
18	Plant a crop	B	45	▲	▲	▲	▲	△	△	▲	△	○	○	●	●			○	○	●	●	○				
20	Maintain a crop	B	30	▲	▲	▲	▲	▲	△	▲	△	○	○	●	○				●	●	●	●				
22	Do maintenance and minor repairs of tools and machinery	B	60	▲	▲	▲	▲	▲	△	△	△	●	○		○					○	○		●				
23	Do periodic maintenance of tractors	B	60	▲	▲	▲	▲	▲	△	▲	△	●	○		○								●				
24	Do regular maintenance of buildings	B	45	▲	▲	▲	▲	▲	△	△	△	●	○		○								○				
26	Be introduced to the practice of the trade	S	45	△	△	△	△	△	△	△	△	○	●	○	○	○	○	○	○	○	○	○	○	●		
27	Enter the work force	S	45	△	△	△	△	△	△	△	△	○	●	○	○	○	○	○	○	○	○	○	○	●		
NUMBER OF OBJECTIVES		14																							27	
DURATION (IN HOURS)			660																							1245

S: Situational objective
B: Behavioural objective

△ Correlation between a step and a specific competency
▲ Correlation to be taught and evaluated
○ Correlation between a general and a specific competency
● Correlation to be taught and evaluated

4. GENERAL OBJECTIVES

The general objectives of the *Dairy Production* program are presented below, along with the major statement of each corresponding first-level operational objective.

To develop in the students the competencies required to integrate harmoniously into the school and work environments.

- Determine their suitability for the trade and the training process.
- Establish relationships among farming practices, the environment, and health and safety.
- Communicate in the workplace.
- Distinguish among the schools of thought in agriculture.
- Be introduced to the practice of the trade.
- Enter the work force.
- Use job search techniques.

To develop in the students the competencies required to carry out the tasks related to dairy production.

- Apply concepts of plant anatomy and physiology.
- Organize the technical data found in the registers of a business.
- Apply concepts of animal anatomy and physiology.
- Apply concepts of animal feeding.
- Apply concepts of genetics and animal reproduction.
- Apply concepts of fertilization and conditioning.
- Identify crop pests.
- Use pesticides.

To develop in the students the competencies required to carry out the tasks related to dairy animals.

- Milk cows and control milk quality.
- Apply a feeding program for dairy cattle.
- Apply a reproduction and improvement program for dairy cattle.
- Apply health care for dairy cattle.

To develop in the students the competencies required to carry out the tasks related to the production of food for dairy animals.

- Prepare the soil.
- Plant a crop.
- Maintain a crop.
- Harvest, condition and store crop production.

To develop in the students the competencies required to carry out the tasks related to the maintenance of machinery and buildings.

- Do periodic maintenance of tractors.
- Do maintenance and minor repairs of tools and machinery.
- Do regular maintenance of buildings.
- Apply concepts of oxyacetylene cutting and arc welding.

5. FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES

5.1 DEFINITION

A first-level objective is defined for each competency to be developed. Competencies are organized into an integrated training program designed to prepare students to practise the trade or occupation. This systematic organization of competencies produces better overall results than training by isolated objectives. More specifically, it fosters a smooth progression from one objective to the next, saves teaching time by eliminating needless repetition, and integrates and reinforces learning material.

First-level operational objectives are the main, compulsory teaching/learning targets and they are specifically evaluated for certification. There are two kinds of operational objectives: behavioural and situational.

- **A behavioural objective** is a relatively closed objective that describes the actions and results expected of the student by the end of a learning step. Evaluation is based on expected results.

- **A situational objective** is a relatively open-ended objective that outlines the major phases of a learning situation. It allows for output and results to vary from one student to another. Evaluation is based on the student's participation in the activities of the learning context.

Second-level operational objectives are intermediate teaching/learning targets deemed prerequisite for attaining first-level objectives. They are grouped according to the specifications (see 5.2 A) or the phases (see 5.2 B) of the first-level objective.

The division of operational objectives into first- and second-level objectives is based on a clear distinction between the levels of learning:

- learning involving prerequisite knowledge

- learning involving competencies

Second-level operational objectives indicate prerequisite knowledge. They prepare the students to learn what is necessary to attain the first-level operational objectives, which collectively lead to the development of a competency. The objectives should always be adapted to meet the particular needs of the individual students or groups of students.

First-level operational objectives cover the learning that the students need to develop a competency:

- The specifications or the phases of the objective determine or guide specific learning, thereby allowing the competency to be developed step by step.

- The objective as a whole (i.e. the six components and in particular the last phase of a situational objective) determines or guides the overall learning and the integration and synthesis of this learning, allowing the competency to be developed fully.

To attain the objectives, the following learning activities may be prepared:

- specific learning activities for second-level objectives
- specific learning activities for the specifications or phases of first-level objectives
- general learning activities for first-level objectives

5.2 HOW TO READ FIRST-LEVEL OPERATIONAL OBJECTIVES

A. How to Read a Behavioural Objective

Behavioural objectives consist of six components. The first three provide an overview of the objective:

1. The **expected behaviour** states a competency in terms of the general behaviour that the students are expected to have acquired by the end of the module.

2. The **conditions for performance evaluation** define what is necessary or permissible to the students during evaluation designed to verify whether or not the students have attained the objective. This means that the conditions for evaluation are the same wherever and whenever the program is taught.

3. The **general performance criteria** define the requirements by which to judge whether or not the results obtained are generally satisfactory.

The last three components ensure that the objective is understood clearly and unequivocally:

4. The **specifications of the expected behaviour** describe the essential elements of the competency in terms of specific behaviours.

5. The **specific performance criteria** define the requirements for each of the specifications of behaviour. They ensure a more enlightened decision on the attainment of the objective.

6. The **field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

B. How to Read a Situational Objective

Situational objectives consist of six components:

1. The **expected outcome** states a competency as an aim to be pursued throughout the course.

2. The **specifications** outline the essential aspects of the competency and ensure a better understanding of the expected outcome.

3. The **learning context** provides an outline of the learning situation designed to help the students develop the required competencies. It is normally divided into three phases of learning:

   - information
   - performance, practice or involvement
   - synthesis, integration and self-evaluation

4. The **instructional guidelines** provide suggested ways and means of teaching the course to ensure that learning takes place and that the same conditions apply wherever and whenever the course is taught. These guidelines may include general principles or specific procedures.

5. The **participation criteria** describe the requirements the students must fulfil, which are usually related to each phase of the learning context. They focus on how the students take part in the activities rather than on the results obtained. Participation criteria are normally provided for each phase of the learning context.

6. **The field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

PART II

MODULE 1: THE TRADE AND THE TRAINING PROCESS

CODE: 721 012

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to
determine their suitability for the trade and the training process.

SPECIFICATIONS

At the end of this module, the students will:

- Be familiar with the nature of the trade.
- Understand the training process.
- Confirm their career choice.

LEARNING CONTEXT

PHASE 1: **Information on the Trade**

- Learning about the nature of the trade and the employment requirements: tasks, physical and intellectual skills, working conditions, etc.

- Situating the chosen production sector with respect to the other production sectors.

- Discovering different sources of information:
  - observations made in the field, written references, internal and external resource persons.

- Visiting enterprises in the chosen production sector and collecting information on how they are organized and how they operate.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

- Presenting to the members of the group data collected on different subjects, a report on their agricultural experience, etc., and discussing their perceptions and the agricultural context: advantages, disadvantages.

PHASE 2: **Information on the Training Process**

- Learning about the training process: program, instructional approach, evaluation methods, certification.

- Learning about the physical organization of and the resources available in the educational institution and in the community.

PHASE 3: **Evaluation and Confirmation of Career Choice**

- Determining their preferences, aptitudes, and interests in relation to the chosen trade.

- Discussing the accuracy of their perception of the trade.

- Specifying their preferences, interests and aptitudes for the trade.

- Listing their prior learning and the difficulties they anticipate in relation to the training process.

- Preparing a report in which they assess their career choice by comparing the nature and requirements of the trade with their preferences, aptitudes and interests.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with the means to assess their career choice honestly and objectively.
- Create a climate that favours the students' personal growth and integration into the job market.
- Encourage the students to engage in discussions and express their opinions.
- Motivate the students to take part in the suggested activities.
- Help the students to arrive at an accurate and objective perception of the trade.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

- Ensure that the students are well-suited to the trade.
- Organize visits to businesses that are representative of the workplace in dairy production.
- Make available all pertinent reference materials, e.g. information on the trade, training programs, guides.
- Provide a list of businesses where former students are working as employees or as owners.
- Make available appropriate support during research, visits and discussions.
- Provide students with a model for the report to be prepared in the course of the module.

PARTICIPATION CRITERIA

PHASE 1:

- Become familiar with most of the topics to be covered.
- Adequately express their views on the trade during individual or group meetings.

PHASE 2:

- Study the documents provided.
- Give their opinion of the program of study as it relates to the trade.
- Gather information on most of the topics to be covered.

PHASE 3:

- Write a report that explains how they arrived at their career choice, taking into account the characteristics and requirements of the trade and their preferences, aptitudes and interests.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking any of the activities:

1. Realize the importance of choosing a suitable career.
2. Understand the competency being developed and the suggested training process.
3. Be receptive to information about the trade and the training process.
4. Practise using various techniques that facilitate intellectual work:
   - note taking, the résumé, research, observation sheets, evaluation checklists, text analysis, examination of model reports and preparation for an examination.

Before undertaking the activities of Phase 1:

5. Prepare a visit to a farm.
6. Determine how to record and present information.
7. Explain the term *entry-level qualifications*.
8. Explain the main rules governing group discussion.

Before undertaking the activities of Phase 2:

9. Differentiate between the skills, aptitudes and knowledge required to practise the trade.
10. Describe the nature, purpose and content of a program of study.

Before undertaking the activities of Phase 3:

11. Differentiate among preferences, aptitudes and interests.
12. Describe the main parts of a report confirming their career choice.

MODULE 2: ESTABLISHING RELATIONSHIPS AMONG FARMING PRACTICES, THE ENVIRONMENT, AND HEALTH AND SAFETY

CODE: 721 023

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
establish relationships among farming practices, the environment, and health and safety
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using:
  - cases specific to the trade
  - simulations
  - a first-aid kit
- Referring to laws and regulations on occupational health and safety

GENERAL PERFORMANCE CRITERIA

- Appropriate solutions and actions during case studies
- Observance of legislation

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Define the concept of the environment.	- Illustration of the components of the environment - Description of the development of ideas on the environment - Recognition of the interaction of living creatures and the environment - Description of the actions of the environment on living beings, including humans, and vice versa
B. Identify and explain preventive measures aimed at protecting the environment.	- Recognition of environmental stressors - Recognition of areas that are at risk of pollution on a dairy farm - Observance of the laws and regulations on environmental protection - Observance of work methods that are safe for the environment
C. Identify and explain preventive measures aimed at reducing the risks of accidents and illnesses inherent in the practice of the trade.	- List of the risks related to carrying out certain tasks, to the working environment, to the use of hazardous substances, and to certain types of equipment and tools - Determination of protective equipment required for the safety of the user - Use of safe work methods - Suitability of work areas

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Develop a prevention program specifically for a dairy farm.	- Complete review of the safety rules specific to the tasks to be carried out on a dairy farm - Determination of the components of a prevention program - Observance of instructions on the use of products and equipment
E. Apply the main emergency response measures.	- Application of response techniques in cases of crushing, poisoning, fire, bleeding, spills of hazardous substances or the emission of toxic gases - Knowledge of the resource organizations and their roles in emergencies - Appropriate use of a first-aid kit - Observance of established response procedures

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to define the concept of the environment (A):

1. Realize the importance of the environment for living creatures, including human beings.

Before learning how to identify and explain preventive measures aimed at protecting the environment (B):

2. Recognize the importance of protecting the environment and workers.
3. Define the legal framework of environmental protection and occupational health and safety.
4. Explain the rights and obligations of farmers and of farm workers.

Before learning how to identify and explain preventive measures aimed at reducing the risks of accidents and illnesses inherent in the practice of the trade (C):

5. Recognize that we are all at risk for accidents and illnesses.

Before learning how to develop a prevention program specifically for a dairy farm (D):

6. Possess the data required to apply a prevention program.

Before learning how to apply the main emergency response measures (E):

7. Describe the main items in a first-aid kit.
8. Define first aid and its purposes.
9. List all the emergency situations that are likely to occur on a dairy farm.

MODULE 3: COMMUNICATING IN THE WORKPLACE

CODE: 721 032

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

To demonstrate the required competency, the students must
communicate in the workplace
in accordance with the following conditions, criteria and specifications.

SPECIFICATIONS

By the end of this module, the student will:

- Realize the importance of communication in the workplace.
- Know the principles and techniques related to various forms of communication.
- Increase their capacity to communicate with the different members of the agricultural sector.

LEARNING CONTEXT

PHASE 1: **Awareness**

- Participating in activities that lead to a realization of the difficulty of communicating.
- Recognizing the characteristics of effective communication and the factors that favour and hinder communication.
- Recognizing that forms of communication can be different according to the persons involved.

PHASE 2: **Application**

- Participating in activities that permit the practice of different communication techniques.
- Participating in simulated sessions that permit the application of different communication techniques with different people.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

PHASE 3: **Evaluation of their ability to communicate with the different members of the agricultural sector**

- Preparing a report on their weak points and strong points in the area of communication with the different people in the agricultural workplace and measures to be taken to improve their performance.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Make available all pertinent reference materials.
- Encourage the participation of all students.
- Develop learning situations related to the agricultural sector.
- Provide support for carrying out activities.
- Provide hypothetical situations in the agricultural sector for purposes of role playing.
- Provide charts to help students gather data during role playing.
- Promote serious attitudes and respect during role playing and group evaluation.

PARTICIPATION CRITERIA

PHASE 1:

- Participate enthusiastically in awareness activities in order to realize the difficulty of communicating.
- Draw up a list of characteristics of effective communication and factors that favour or hinder communication.
- Draw up a list of problem situations that could arise with the different members of the agricultural sector.

PHASE 2:

- Play an active role in simulated sessions to practise different communication techniques.
- Participate actively in role playing that represents different situations involving members of the agricultural sector.

PHASE 3:

- Produce a realistic and coherent report, based on a self-evaluation, on the measures to be taken to improve their communication techniques with the members of the sector.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking any of the activities:

1. Understand the competency being developed and the suggested training process.

Before undertaking the activities of Phase 1:

2. Realize the importance of communication.
3. Explain what role playing consists of.

Before undertaking the activities of Phase 2:

4. Explain the main rules that permit a proper group discussion.

Before undertaking the activities of Phase 3:

5. Explain the stages of a self-evaluation process.
6. List the parts of a report.

MODULE 4: SCHOOLS OF THOUGHT IN AGRICULTURE

CODE: 721 042 **Duration: 30 hours**

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to
distinguish among the schools of thought in agriculture.

SPECIFICATIONS

During this module, the students will:

- Distinguish among the schools of thought in agriculture.
- Recognize the importance of the influence of the schools of thought in Québec agriculture.
- Determine the relevance of the schools of thought in Québec agriculture.

LEARNING CONTEXT

PHASE 1: **Characterize the schools of thought in agriculture**

- Drawing up an exhaustive list of the different schools of thought in agriculture.

- Accurately describing the schools of thought from the point of view of their history, philosophy, principles, development and goals.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: **Importance of these schools of thought in Québec agriculture**

- Accurately describing the evolution of these schools in Québec.
- Recognizing the real influence of these schools of thought on Québec agriculture.
- Recognizing the real influence of these schools of thought on organizations such as unions, cooperatives, associations, the ministère de l'Agriculture and educational institutions.

PHASE 3: **Pertinence of adhering to a particular school of thought in agriculture**

- Establishing links between past, present and future agricultural practices and the different schools of thought.
- Comparing the goals pursued by the different schools of thought.
- Choosing a school of thought.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide students with the documents necessary for their research and reflection.
- Present audiovisual documents to stimulate reflection and discussion.
- Promote the exchange of opinions among students, and encourage students to express their views.
- Encourage discourse that is structured and supported by pertinent observations and credible documents.

PARTICIPATION CRITERIA

PHASE 1:

- Gather data on the different schools of thought in agriculture.
- Make data sheets on the different schools of thought in agriculture.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2:

- Listen attentively to the information and explanations on the influence of the different schools of thought in agriculture.
- Study the documents provided.
- Express clearly their perceptions of the schools of thought in agriculture, on the basis of their observations, their research and their critical sense.
- Express clearly their perceptions of the influence of the schools of thought on agricultural organizations.

PHASE 3:

- Choose a school of though and give reasons for their choice.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking the activities of Phase 1:

1. Realize the importance of knowing the schools of thought in agriculture.

Before undertaking the activities of Phase 2:

2. Understand the influence of these philosophical currents on the evolution of agriculture.

Before undertaking the activities of Phase 3:

3. Understand that, in any case, one's agricultural practice belongs to one of the schools of thought.

MODULE 5: ORGANIZING THE TECHNICAL DATA FOUND IN THE REGISTERS OF A BUSINESS

CODE: 721 056 **Duration: 90 hours**

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
organize the technical data found in the registers of a business
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Given actual and hypothetical cases
- Using:
  - technical data
  - relevant reference materials
  - different registers
  - collected data
  - a microcomputer and its peripherals
  - software packages

GENERAL PERFORMANCE CRITERIA

- Observance of the proposed methods and instructions
- Critical sense during the input of technical data
- Observance of the rules for presenting documents
- Proper use of expressions according to the different sectors of an agricultural enterprise
- Sense of logic
- Precision and attention to detail
- Understanding of the operation of the equipment
- Proper use of software packages

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Gather the technical data.	- Proper collection of technical data - Evaluation of the relevance of certain data
B. Select the technical data.	- Selection of technical data according to the different sectors of the enterprise - Proper classification of technical data according to the needs of the sector
C. File receipts.	- Full recognition of the information contained on receipts - Classification of receipts according to recognized methods
D. Record the technical data.	- Proper classification of the technical data - Accurate entry of the data using the proper methods - Observance of conventions when entering data - Entry of all information
E. Prepare the reports and registers.	- Preparation of reports and registers for the different sectors of the business
F. Use agricultural software packages for the processing of technical data.	- Mastery of the operation of spreadsheet-type data processing software - Mastery of software packages dealing with fields, feeding, genetic improvement, accounting, maintenance of machinery and milk production

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
G. Produce reports from technical data.	- Familiarity with the parts of a report - Presentation of reports according to accepted methods - Mastery of software and peripherals in order to prepare reports from technical data

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to gather the technical data (A):

1. Be familiar with the terminology appropriate to the different sectors of an enterprise.
2. Be familiar with the machinery and the materials typical of an agricultural enterprise.
3. Recognize the importance of gathering technical data in order to improve the productivity of an enterprise.

Before learning how to select the technical data (B):

4. Identify the essential elements to enter in the registers.

Before learning how to file receipts (C):

5. Be familiar with a filing system.
6. Recognize the importance of filing receipts.

Before learning how to record the technical data (D):

7. Be familiar with the registers characteristic of an agricultural enterprise.

Before learning how to prepare reports and registers (E):

8. Be familiar with the different forms of presentation for reports and registers.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to use agricultural software packages for the processing of technical data (F):

9. Be familiar with the instruction guides and reliable human resources for the installation of a computer system.
10. Be familiar with the basic concepts of operating a microcomputer and its peripherals.
11. Be familiar with the sources of information in the area of agricultural software.
12. Be familiar with the limitations of software packages and computer equipment.

Before learning how to produce reports from technical data (G):

13. Name the uses of technical data reports.

MODULE 6: APPLYING CONCEPTS OF ANIMAL ANATOMY AND PHYSIOLOGY

CODE: 721 064

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of animal anatomy and physiology
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - models, diagrams or illustrations
  - anatomical specimens

GENERAL PERFORMANCE CRITERIA

- Accurate location of the main components of various systems on diagrams
- Mastery of basic concepts of animal anatomy and physiology
- Proper use of terminology
- Clear explanations and descriptions

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the composition of the skin and related structures.	- Proper description of epithelial and connective tissue - Relevant description of the make-up of related structures such as hair, horns and hooves - Accurate identification of common pathologies of the skin and related structures

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Describe the skeletal system.	- Recognition of the main bones and precise determination of their locations - Recognition of the composition and function of bones
C. Describe the cardiovascular system.	- Precise description of the cardiovascular system - List of the main components of the cardiovascular system - Relevant explanation of the functioning of the cardiovascular system - Clear explanation of the immune function - Appropriate description of common pathologies of the cardiovascular system
D. Describe the respiratory system.	- List of the main components of the respiratory system and determination of their locations - Coherent explanation of the respiratory system - Appropriate description of the most common pathologies of the respiratory system

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Describe the digestive system of polygastrics.	- List of the main components of the digestive system and determination of their locations - Accurate explanation of the functions of the organs of the digestive system - Description of the transformation of the stomach in cattle, from monogastric to polygastric - Relevant description of common pathologies of the digestive system
F. Describe the nervous system.	- List of the main components of the nervous system - Pertinent explanation of the functioning of the nervous system - Appropriate description of common pathologies of the nervous system
G. Describe the endocrine system.	- Accurate list of the main glands and precise determination of their locations - Accurate explanation of the roles of glands

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Describe the reproductive system.	- Accurate list of the organs of the male and female reproductive systems - Accurate explanation of the physiology of the reproductive system - Relevant explanation of the roles of the reproductive system - Appropriate description of common pathologies of the reproductive system
I. Describe the mammary system.	- Accurate list of the main components of the mammary system - Pertinent explanation of the physiology of the mammary gland - Precise determination of the hormonal influence on lactation - Relevant description of common pathologies of the mammary gland
J. Describe the urinary system.	- Accurate list of the organs of the urinary system - Pertinent explanation of the roles of the organs of the urinary system

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe various systems:

1. Describe the anatomy of an animal cell.
2. Explain the role of the cell membrane.
3. Differentiate cell, tissue, organ and system.
4. Realize the importance of knowing the different systems.
5. Understand the importance, for the purpose of effectiveness, of knowing the most common pathologies.

Before learning how to describe the cardiovascular system (C):

6. Understand that it is essential to recognize the symptoms of acute diseases since it can be a matter of survival of the animal.
7. Explain what blood is.
8. Explain the phenomenon of oxidation.

Before learning how to describe the digestive system of polygastrics (E):

9. Describe the differences in the digestive systems of monogastrics and polygastrics.
10. Identify the different species of animals according to their digestive systems.

Before learning how to describe the reproductive system (H):

11. Explain the importance of the development of the animal when it attains sexual maturity.

MODULE 7: MILKING COWS AND CONTROLLING MILK QUALITY

CODE: 721 073

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
milk cows and control milk quality
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working with a herd of dairy cattle
- Using:
  - data from DHAS reports and production records
  - equipment and products required for milking
  - a scale
  - a spurious charge voltage tester

GENERAL PERFORMANCE CRITERIA

- Observance of the time and duration of the milking
- Mastery of milking techniques
- Sense of observation
- Precision and attention to detail
- Proper use of the milking and milk storage systems
- Safe handling of animals and equipment
- Observance of the rules of hygiene and cleanliness

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	**SPECIFIC PERFORMANCE CRITERIA**
A. Plan the milking.	- Systematic referral to records and management chart - Accurate identification of lactating cows and dry cows - Appropriate recognition of special cases - Determination of the treatments and care to be administered
B. Organize the milking.	- Proper cleaning and sanitation of the environment - Appropriate selection of cow positions - Pertinent choice of milking sequence - Methodical distribution of the work among the milkers, if need be - Preparation of the milking cart
C. Use the milking and milk cooling systems.	- Proper start-up of the milking system - Proper cleaning and sanitation of the milking system - Careful check of the functioning of the cooling and milking systems - Timely replacement of teat cup liners and other milking system parts - Sensible use of sanitation products - Placement of equipment for cleaning at the end of the milking - Complete observance of the manufacturer's instructions - Proper disposal of sanitary products

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Detect defects in the operation of the milking and milk cooling systems.	- Verification of the vacuum pump and tubing - Verification of the pulsation system - Verification of the proper functioning of the milk cooling system
E. Carry out the stages of milking.	- Use of an individual mastitis detection method - Correct determination of the cows to be milked - Washing and stimulation of the udder - Operation of the milking machine - Meticulous observance of the stages of efficient milking - Accurate weighing of milk for milk records - Taking of milk samples - Calm, gentle handling - Observance of rules of hygiene and cleanliness - Sanitation of teats after milking - Rigorous observance of withholding time when medication is used
F. Record data in the various registers.	- Precise recording of milk weights for milk records - Recording of all illnesses or abnormalities observed during milking or identified by the veterinarian - Updating of the various data - Clear, neat recording of data

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
G. Verify their efficiency according to ratios such as the average milking time per cow and the milk quality.	- Determination of the number of cows milked per unit of time - Precise checking of the milk quality by means such as the leucocyte count and the record of mastitis cases

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to plan the milking (A):

1. Explain the importance of the data entered in the registers and the management chart.
2. Recognize the information that belongs in the management chart.
3. List the special cases among the cows.
4. Describe the appropriate treatments according to types of mastitis.

Before learning how to organize the milking (B):

5. Recognize the different sanitation products.
6. Explain the importance of a hygienic milking environment.
7. Describe the components of a milking system.
8. Recognize wear in the components of a milking unit.
9. Explain the maintenance program of a milking system.
10. Explain the operation of vacuum level in a milking system.
11. Explain the operation of a milk storage system.

Before learning how to use the milking and milk cooling systems (C):

12. Indicate the influence of the milking system on the health of the udder.

Before learning how to detect defects in the operation of the milking and milk cooling systems (D):

13. Recognize the appropriate operating criteria for the milking and milk cooling systems.
14. Describe the problems caused by the presence of spurious voltage.

Before learning how to carry out the stages of milking (E):

15. Explain the biochemical and physiological processes of milk letdown.
16. Describe the main phases in milking necessary for the production of quality milk.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to record data in the various registers (F):

17. Indicate the rules and standards related to milk quality.
18. Recognize the information shown on a milk record.

MODULE 8: APPLYING HEALTH CARE FOR DAIRY CATTLE

CODE: 721 084

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply health care for dairy cattle
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working with a herd of dairy cattle
- Using:
  - production records
  - milk records
  - a health care program
  - medication and material used for animal care
  - references on health care
- Wearing appropriate clothing

GENERAL PERFORMANCE CRITERIA

- Relevance of the health diagnosis
- Observance of health and hygiene standards when dispensing care
- Observance of health and safety standards
- Presence of all data in the registers
- Reasonable time taken when dispensing care
- Attention to order and cleanliness
- Demonstration of calm and skill with the animals

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Interpret a health care program for dairy cattle.	- Understanding of each procedure and treatment in the program
B. Establish a work schedule.	- Precise determination of the frequency of care to give - Efficient, detailed and step-by-step planning of care and observations
C. Check the conditions and factors affecting the health of dairy cattle.	- Determination of the various factors and conditions affecting the health and comfort of animals, such as housing, handling, ventilation and humidity - Verification of the surroundings and the control apparatuses - Proper adjustment of the control apparatuses - Cleanliness of the feed alleys, stalls, pens and other housing areas - Appropriate concern for the well-being of the animals - Safe handling of the animals

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Dispense the preventive care specific to each stage in life.	- Determination of the care to be given according to the stage in life, the time of year, the type of housing and specific circumstances, such as disinfection of the navel, teat dips, deworming, dehorning, hoof trimming, clipping and brushing - Routine maintenance of animal production systems and material, including cleaning, disinfection and storage - Strict observation of rules of hygiene and cleanliness while using treatment material such as syringes and disposable towels - Observance of predetermined doses, and work methods and techniques - Updating of the relevant registers

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Identify any anomalies in health and behaviour.	- Meticulous observation of the various categories of dairy cattle with normal behaviour and in good health - Accurate observation of suspected animals in comparison with normal animals - Precise description of disease symptoms, anomalies, weaknesses, or abnormal behaviour, in order to provide a history of the case to the veterinarian - Application of an individual mastitis detection method - Determination of the responsible factors or agents - Consultation with animal health professionals in case of doubt
F. Respond in emergency situations.	- Proper evaluation of the seriousness of the illness or anomaly - Appropriate care or treatment according to the factors responsible - Proper determination of the role of the farmer or the veterinarian, as the case may be
G. Apply or interpret the instructions of the veterinarian for curative care, if applicable.	- Proper application or interpretation of the veterinarian's instructions for the curative care to be given to the animal

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to interpret a health care program for dairy cattle (A):

1. Identify the different categories of dairy cattle.
2. Realize the importance of a healthy environment for the well-being of animals.
3. Realize the economic losses caused by cattle in poor health.

Before learning how to establish a work schedule (B):

4. Be familiar with the level of difficulty, importance and duration of each operation.

Before learning how to check the conditions and factors affecting the health of dairy cattle (C):

5. Be familiar with the criteria for well-being of the various categories of dairy cattle.

Before learning how to dispense the preventive care specific to each stage in life (D):

6. Be familiar with the objectives of raising dairy cattle at each stage of life and production.
7. Have the information that is required and valid in preventive care.
8. Be familiar with the methods of controlling microbes and parasites.
9. Be familiar with the effects of overdoses and insufficient doses.

Before learning how to identify any anomalies in health and behaviour (E):

10. Recognize the limits of their judgment in the area of veterinary medicine.
11. Be familiar with the various problems common to dairy cattle.

MODULE 9: APPLYING CONCEPTS OF GENETICS AND ANIMAL REPRODUCTION

CODE: 721 093

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of genetics and animal reproduction
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using:
  - herd records
  - breeders' catalogues
  - a classification report
  - the Dairy Herd Analysis Service (DHAS)
  - the different certificates issued by breed associations and production records
- Following instructions received on the production objectives

GENERAL PERFORMANCE CRITERIA

- Mastery of basic concepts related to genetics and reproduction
- Consideration of the criteria used in the evaluation of dairy cattle
- Clear interpretation of the main management tools used in genetics and reproduction
- Accurate use of terminology
- Precision

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	**SPECIFIC PERFORMANCE CRITERIA**
A. Describe the parameters to be considered in qualitative genetics.	- Accurate distinction among dominance, recessivity and co-dominance - Accurate statistical distribution of phenotypes and genotypes in cases of monohybridism and dihybridism - Relevant definition of lethal gene and sublethal gene, using an example - Accurate explanation of the genetic determination of sex - Succinct explanation of how characteristics are carried by the genes located on sex chromosomes in cases of: • characteristics related to sex • characteristics influenced by sex • characteristics limited by sex
B. Describe the parameters to be considered in quantitative genetics.	- Accurate explanation of the influence of the environment on the expression of quantitative characteristics, using the concepts of heritability and repeatability - Statistical generalization of the distribution of the frequency of phenotypes for a quantitative characteristic - Determination of the economic importance of quantitative genes

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Estimate the genetic value of breeding stock.	- Concise description of the standards and objectives of each breed - Appropriate interpretation of the tools for evaluating breeding animals, such as sire catalogues, DHAS production records, PEP and CIAQ classification reports, lifetime production certificates, reports on ROP and EDP programs - Relevant explanation of evaluation systems, such as the BCA (breed class average) and the LPI (lifetime profit index) - Accurate evaluation of the genetic value of breeding stock
D. Establish a genetic relationship between individuals.	- Precise determination of the characteristics specific to a breed, a strain and a family - Clear explanation of the different types of growth and their effects on genetic improvement - Study made of genealogy to determine family relationships - Calculation of rate of consanguinity of offspring
E. Determine the components of genetic progress in dairy cattle.	- Accurate determination of the factors affecting the intensity of selection - Relevant determination of the effects of genetic and reproduction techniques on genetic progress

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe the parameters to be considered in qualitative genetics (A):

1. Explain the physical bases of heredity.
2. List the chronological stages of cell division.
3. Explain the phenomenon of the transmission of characteristics to future generations, using Mendel's laws.
4. Distinguish between phenotype and genotype.

Before learning how to estimate the genetic value of breeding stock (C):

5. Use properly the evaluation tools for dairy cattle.
6. Explain the operation of breed associations.
7. Explain the National Identification Program (NIP).
8. Explain the relevant information that appears in sire catalogues.

Before learning how to establish a genetic relationship between individuals (D):

9. Explain a pedigree and its usefulness.
10. Define consanguinity and its effects on offspring.

Before learning how to determine the components of genetic progress in dairy cattle (E):

11. List the selection criteria for dairy cattle.
12. List the techniques that contribute to genetic progress.
13. Explain the operation of different genetic and reproduction technologies.

MODULE 10: APPLYING CONCEPTS OF ANIMAL FEEDING

CODE: 721 103

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of animal feeding
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - forage and concentrates
  - feed analyses
  - instructions received and equipment appropriate to the task

GENERAL PERFORMANCE CRITERIA

- Mastery of the basic concepts of animal nutrition and the feeding of dairy cattle and beef cattle
- Visual recognition and evaluation of the forage crops and concentrates used in feeding dairy cattle and beef cattle
- Mastery of the sampling technique
- Precise use of terminology

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the feeds used on dairy and beef farms.	- List of the main feeds used for dairy cattle and beef cattle - Brief description of the vegetable components, such as leaves, stems and texture - Description of the role of each of the feeds in the feeding program for dairy cattle and beef cattle
B. Describe the phenomena affecting the characteristics of feeds.	- Brief description of the main phenomena such as breathing, fermentation, leaking and the development of moulds - Understanding of the effect of each of these phenomena on feeds
C. Take representative samples of feeds for analysis.	- Observance of sampling technique - Proper labelling of the sample - Uniform representation of the batch sampled
D. Evaluate the samples by sight, smell and touch.	- Determination of important criteria, such as texture, presence of moulds, abnormal smell and colour - Evaluation of the moisture level and temperature of fermented feeds - Brief description of the effects of various treatments on the physicochemical characteristics of a feed - Accuracy of the evaluation for each of the criteria

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Interpret a feed analysis.	- Determination of minimum and maximum levels for each nutrient and for each category of feed - Accuracy of the judgment of the quality of a crop according to the analysis report
F. Define the nutritional contribution of a feed.	- Determination of the role of each nutrient in dairy production and beef production - Description of the effects brought about by deficiencies and excesses - Relevant description of the nutritional value of forages and concentrates
G. Explain the effects of the physicochemical characteristics of a feed during its digestion by a bovine.	- Evaluation of the consumption of forages at will, according to the stage of maturity of the plant, the varieties and the methods of storage - Evaluation of the total consumption and the nutritional value of feeds processed in various ways

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe the feeds used on dairy and beef farms (A):

1. Realize the importance of the appropriate choice of feeds.
2. Describe the growth stages of a plant.
3. List the plant species that are used in feeding dairy cattle and beef cattle.

Before learning how to describe the phenomena affecting the characteristics of feeds (B):

4. Describe the methods of storage and their effects on feeds.

Before learning how to take representative samples of feeds for analysis (C):

5. Explain the usefulness of feed analysis.
6. Realize the importance of taking representative samples.
7. Explain the sampling technique.

Before learning how to evaluate the samples by sight, smell and touch (D):

8. Describe the appearance of the feeds usually used in feeding dairy cattle and beef cattle.
9. Determine the moisture level of a sample.
10. Define the terms "texture" and "physicochemical."

Before learning how to interpret a feed analysis (E):

11. Describe the information found in an analysis report.
12. Learn about the normal nutrient levels in feeds.

Before learning how to explain the effects of the physicochemical characteristics of a feed during its digestion by a bovine (G):

13. Describe the digestive process of a bovine.
14. Understand the economic importance of maximizing milk production using forage feed.

MODULE 11: APPLYING A REPRODUCTION AND IMPROVEMENT PROGRAM FOR DAIRY CATTLE

CODE: 721 113 **Duration: 45 hours**

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply a reproduction and improvement program for dairy cattle
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working with a herd of dairy cattle
- Using:
  - records and the management chart
  - identification and registration forms
  - specific cases
  - a production proof
  - heat detection tools

GENERAL PERFORMANCE CRITERIA

- Mastery of concepts of reproduction and selection
- Appropriate use of records and reports
- Observation of the estrous cycle of the dairy cow
- Observance of basic concepts of hygiene
- Attention to the criteria for improving the dairy herd

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Determine the economically important characteristics of dairy cattle.	- List of the characteristics of the main dairy breeds - Precise determination of the aesthetic and practical characteristics of each dairy breed - Appropriate evaluation of the subject for type - Determination of the economic characteristics
B. Identify the animals.	- Identification of the animals - Correct execution of tattooing - Accurate recording of data - Exact listing of the requirements for the registration of the main breeds
C. Interpret a replacement program.	- Understanding of the data related to cows and bulls
D. Select cows and bulls.	- Appropriate use of selection criteria - Proper evaluation of the data gathered - Attention to the objectives of the improvement program
E. Detect estrus.	- Accurate observation of signs of estrus - Appropriate use of estrus detection tools - Attention to anomalies of health and behaviour

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
F. Have cattle mate, inseminate them or do an embryo transfer.	- Precise determination of the optimal time for insemination, for natural mating, or for doing an embryo transfer - Appropriate choice of reproduction method - Proper carrying out of the mating - Accurate confirmation of gestation
G. Plan the calving.	- Understanding of the care and feeding that favour calving - Careful handling of the cow and new-born calf - Constant attention to cleanliness and hygiene - Observance of the stages of calving - Appropriate use of material - Rapid detection of the signs of a difficult calving or a calving with complications
H. Record the data.	- Inclusion of all relevant information, such as date, identity of animals, problems, interventions - Clarity of information - Use of management tools
I. Check the results of the improvement program.	- Evaluation of improvement in the conformation of the dairy cattle - Determination of the production of milk and milk components

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to determine the economically important characteristics of dairy cattle (A):

1. Recognize the different dairy breeds.
2. Be familiar with the characteristics sought by consumers of milk and dairy products.
3. Realize the importance of high productivity and good conformation.

Before learning how to identify the animals (B):

4. Understand the operation of breed associations.
5. Realize the importance of national programs for the improvement of dairy cattle.
6. Describe the usefulness of genealogy.

Before learning how to select cows and bulls (D):

7. List the selection criteria for bulls.
8. Describe the major stages in bull selection.
9. List the selection criteria for dairy cows.
10. Use the management tools.
11. Become aware of the importance of a selection program.

Before learning how to detect estrus (E):

12. Understand the estrous cycle of dairy cows.
13. Explain the phenomenon of bulling.
14. List the external signs of a dairy cow in heat.
15. Describe the functioning of heat detection tools.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to have cattle mate, inseminate them or do an embryo transfer (F):

16. Describe the insemination technique.
17. Describe the technique of embryo transfer.
18. Explain the factors that affect the success of these techniques.

Before learning how to plan the calving (G):

19. List the main problems associated with calving.
20. Describe the techniques of intervention in cases of calving problems.
21. Recognize the environmental factors that favour minimum-risk calving.

MODULE 12: APPLYING A FEEDING PROGRAM FOR DAIRY CATTLE

CODE: 721 123

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply a feeding program for dairy cattle
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Working with a herd of dairy cattle
- Using a feeding program for dairy cattle
- Following:
  - the determination and preparation of the required feeds
  - the determination of the animals to be fed
- Using:
  - equipment for the analysis, preparation, handling and distribution of feeds
  - an appropriate software program

GENERAL PERFORMANCE CRITERIA

- Precise distribution of the quantities of feeds
- Complete observance of the feeding program
- Appropriate use of feeding equipment
- Rigorous application of occupational health and safety standards
- Precision and attention to detail
- Sense of observation

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Interpret the data in a dairy cattle feeding program.	- Accurate interpretation of all the data related to the program - Relevant explanation of the data related to each category of dairy cattle - Explanation of the data that affect each category of dairy cattle and each feed being distributed
B. Validate the estimated consumption rates in the feeding program.	- Accurate determination of the feeds to be used - Accurate determination of the weight of the feeds used - Precise determination of the solids content - Precise estimate of actual consumption in solids - Contribution of corrective measures to the feeding program, if necessary
C. Organize the distribution of feed.	- Relevant choice of the number of feedings of forage and concentrates - Relevant choice of the sequence of feed distribution - Recognition of the different categories of dairy cattle and their nutritional needs

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Use feeding equipment.	- Recognition of the different types of feeding equipment - Precise calibration of the feeding equipment - Observance of the manufacturer's standards regarding use and maintenance - Observance of occupational health and safety standards
E. Prepare feed mixes.	- Precise calculation of the mix, taking into account the minimum nutrient contents of the ingredients - Homogeneity of the mixture - Determination of the quantities to be prepared for each feeding - Observance of preparation standards - Observance of mixing sequence - Proper use of equipment
F. Feed the cattle.	- Full observance of the feeding program - Recognition of the different types of feeds and the different categories of dairy cattle - Recognition of the condition of the dairy cattle - Safe distribution of feed - Proper, safe use of distribution equipment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
G. Apply feeding strategies.	- Strict observance of the feeding schedule - Observance of specificities of each animal and of each category, according to appetite, health status and needs - Attention to cleanliness - Proper grouping of the dairy cattle - Safe handling of the dairy cattle - Detailed observation of the behaviour of each animal - Verification of the quantities consumed by each animal, for each feed - Pertinent planning of the gradual transition between two different rations - Regular evaluation of the muscle condition of the dairy cattle

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to interpret the data in a dairy cattle feeding program (A):

1. List the components of a feeding program.
2. Explain the importance of a feeding program.
3. Define the terminology relating to the feeding of dairy cattle.
4. Define each category of dairy cattle.

Before learning how to validate the estimated consumption rates in the feeding program (B):

5. Explain the necessity of evaluating the quantities consumed according to the solids content of the feed.
6. List the ingredients that make up rations.

Before learning how to organize the distribution of feed (C):

7. Explain the functioning of the digestive system of a ruminant.
8. Explain the importance of the proper distribution of feed.

Before learning how to use feeding equipment (D):

9. Describe the equipment used for the feeding of dairy cattle.
10. Indicate the health and safety rules to be applied.
11. Use the feeding equipment properly.

Before learning how to prepare feed mixes (E):

12. Differentiate the terms used in the nutritional requirement tables for dairy cattle.
13. Use appropriately the nutritional requirement tables for dairy cattle.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to feed the cattle (F):

14. Use the feeding equipment properly.
15. Detect possible defects in the feeds.
16. Observe the behaviour of dairy cattle.

Before learning how to apply feeding strategies (G):

17. Recognize the signs that make it possible to evaluate the health status of dairy cattle.
18. Identify the desired flesh condition in accordance with the stage of production.

MODULE 13: APPLYING CONCEPTS OF PLANT ANATOMY AND PHYSIOLOGY

CODE: 721 134

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of plant anatomy and physiology
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - plants or illustrations of plants
  - reference books
  - technical keys

GENERAL PERFORMANCE CRITERIA

- Accurate use of terminology
- Clear and precise explanations of the main physiological phenomena
- Ability to synthesize

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Recognize the main types of tissues and organs.	- Brief description of the main tissues, such as meristem, parenchyma, protective, vascular, and support tissue - Accurate and complete description of the morphology of the main organs, such as root, stem, leaf, flower, fruit and seed - Distinction, by morphological characteristics, of the main families of monocotyledons and dicotyledons
B. Describe physiological phenomena.	- Brief description of the main physiological phenomena, such as respiration, transpiration, photosynthesis, nutrition, growth, and reproduction - Understanding of the importance of each of these functions for the plant and for its subsequent use
C. Describe the characteristics of graminae and legumes.	- Precise description of the biological and morphological characteristics of the two families
D. Recognize the different important agricultural species.	- Accurate recognition of the important agricultural species, such as forage grasses, cereals and corn

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Determine the soil and climatic requirements of the main plants grown.	- Exact determination of the soil characteristics, such as pH, texture, drainage, and fertility - Accurate identification of the criteria that characterize the climate, such as degree-days, heat units, and precipitation - Proper matching of the soil and climatic requirements with the main plants grown
F. Describe the growth of a plant.	- Determination of the different growth stages of plants grown in Québec - Consideration of the accumulation curve for the reserves of the plant - Determination of the right time to harvest

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to recognize the main types of tissues and organs (A):

1. Realize the importance of knowing the different parts of a plant and understanding its development process.
2. Differentiate cell, tissue, organ and system.
3. Describe a plant cell.

Before learning how to recognize the different important agricultural species (D):

4. Be familiar with the concepts of plant classification.
5. Describe the use of a key for the recognition of species.

Before learning how to describe physiological phenomena (B):

6. Distinguish between vegetative organ and reproductive system.
7. List the different ways of processing and using plants on a dairy farm.

Before learning how to determine the soil and climatic requirements of the main plants grown (E):

8. Define the importance and role of the soil in the growth of plants.
9. Define the importance of climatic conditions for the growth of plants.

MODULE 14: USING PESTICIDES

CODE: 721 142

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
use pesticides
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - pesticides
  - the required tools and equipment
- Consulting the recommendations of pesticide makers
- Using cases specific to the trade
- In accordance with the laws and regulations on environmental protection and pesticides

GENERAL PERFORMANCE CRITERIA

- Observance of environmental protection laws and regulations
- Observance of standards for the safe, rational use of pesticides
- Wearing of protective clothing and a mask
- Precise calibration of instruments
- Precision of the concentration of the product to be applied
- Appropriate solutions and actions when doing case studies
- Constant attention to environmental protection

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the scope of pesticide use provincially, nationally and internationally.	- Accurate description of the main areas of pesticide use in quantity and monetary value - Accurate knowledge of the main intermediaries in the network for the distribution and use of pesticides
B. Describe the possible sources of air, water and soil contamination by pesticides.	- Inclusion of the main sources of contamination - Description of the behaviour of pesticides, such as dispersion, migration and degradation - Description of the environmental repercussions of the presence of these pesticides
C. Describe the effects of pesticides on plants and animals.	- Accurate description of the main effects, such as physiological changes, the development of resistance, decreased population of predatory insects and parasites, the elimination of polliniferous insects and the lethal and sublethal effects on animals - Clarity of information
D. Describe the potential health problems linked to pesticide use.	- Accurate and complete description of the main health problems in human beings, such as cancer and effects on reproduction - Accurate association of the problems with the different tasks in the dairy and beef production sector

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Determine the factors in changing attitudes with regard to pesticide use.	- Accurate determination of the reasons for and against the use of pesticides - Description of the stages in the process of change - Justification of the need for change in attitude with regard to pesticide use for the individual, society and the ecosystem
F. Summarize the laws and regulations governing pesticide use.	- Inclusion of the main elements, such as the objectives pursued, application methods, obligations, and consequences of violations - Accurate and clear information
G. Explain prevention techniques with regard to insects, diseases and disorders.	- Accurate description of prevention techniques - Complete description of ecological prevention techniques, such as crop rotation, resistant varieties, farming techniques, and use of natural enemies - Encouragement of the growth of healthy crops

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Describe the main types of pesticides.	- Accurate interpretation of the information on the label - Brief description of the different modes of action - Accurate description of the principal formulations, such as emulsifiable concentrate, granules, dust, wettable powder and solution - Accurate description of compatibility between various pesticide formulas - Accurate association of a pesticide with a given type of damage

FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE**	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	**SPECIFIC PERFORMANCE CRITERIA**
I. Prepare different pesticides for application.	- Observance of the dose and quantity when preparing the product - Safe use of equipment - Use of protective clothing - Appropriate choice of adjuvant - Proper concentration of the product - Calibration of apparatuses and equipment - Accuracy of the quantities of products prepared - Homogeneity of the mixture - Cleanliness of the material after use - Thorough inspection of the material - Maintenance and decontamination of clothing and protective equipment - Safe disposal of leftover products and empty containers - Orderly and safe storage of products and equipment - Precautions taken when transporting pesticides - Safe handling of pesticides during application
J. Describe guidelines for proper pesticide application.	- Inclusion of the main points to be observed, such as drift, prevention of resistance and environmental protection - Accurate description of the actions to be taken in cases of ineffective treatment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
K. Describe the general procedure in case of accidents with pesticides.	- Appropriate choice of action in case of spill or fire - Accurate description of the stages of cleaning and decontamination - Precise knowledge of the organizations to be consulted
L. Plan an intervention strategy.	- Accurate evaluation of damage - Establishment of the necessity of direct intervention - Knowledge of indirect methods - Accurate knowledge of the time of intervention - Appropriate choice of treatment, taking into consideration environmental protection, the life cycle of the pest, and the plant to be treated - Logical sequence of the stages of intervention - Analysis and accounting of all the actions taken
M. Explain the emergency measures to be taken in case of pesticide poisoning.	- Accurate knowledge of the signs and symptoms - Presentation of the appropriate means of intervention - Observance of the limits of the area of intervention

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe the scope of pesticide use provincially, nationally and internationally (A):

1. Be familiar with the sources of information on pest control.
2. Describe the economic advantages of pesticide use.

Before learning how to describe the potential health problems linked to pesticide use (D):

3. Be familiar with the sources of exposure to pesticides.
4. Identify the routes of entry of pesticides into the organism.
5. Define "toxicity" and "LD50."
6. Recognize the factors that influence toxicity.
7. List the tasks of the dairy or beef producer that are related to the use of pesticides.

Before learning how to determine the factors in changing attitudes with regard to pesticide use (E):

8. Become aware of the limits of scientific knowledge about pesticides, weeds and pests, and alternative methods.
9. Recognize the different hazardous practices related to the use of pesticides.
10. Recognize the influence networks.
11. Be familiar with the emotional cycle of the individual with regard to change.

Before learning how to summarize the laws and regulations governing pesticide use (F):

12. Distinguish among the different levels of intervention.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare different pesticides for application (I):

13. Be familiar with the health and safety rules.
14. Realize the importance of safety equipment.
15. Describe the equipment for the application of pesticides.
16. Identify the criteria to be considered when choosing a pesticide and the adjuvant used with it.
17. Calibrate the apparatuses.
18. Explain the appropriate methods of moving each piece of equipment.
19. Understand the importance of totally eliminating pesticides from application apparatuses.

Before learning how to plan an intervention strategy (L):

20. Be familiar with the potential pests and their causes.
21. Describe the stages required for integrated control.

Before learning how to explain the emergency measures to be taken in case of pesticide poisoning (M):

22. Differentiate the various forms of pesticide poisoning: by ingestion, inhalation, skin contact and eye contact.

MODULE 15: SOIL PREPARATION

CODE: 721 154

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
prepare the soil
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using:
  - plots of land
  - appropriate agricultural tools
  - a tractor
  - the necessary supplies
- In accordance with the farm records and the manufacturers' operating manuals

GENERAL PERFORMANCE CRITERIA

- Observance of the crop program
- Observance of work methods and techniques
- Mastery of tractor driving
- Observance of occupational health and safety rules
- Respect for the environment when using pesticides and fertilizers

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Determine the physical characteristics of the soil.	- Description of the soil structure - Description of the soil texture - Understanding of the soil profile - Interpretation of the bulk density and the actual density of the soil
B. Define soil preparation needs.	- Accurate determination of the soil class, its agricultural potential and its constraints - Accurate evaluation of soil drainage and damage caused by intensive practices, erosion, compaction and other similar factors - Evaluation of soil preparation needs - Relevant choice of farming techniques - Determination of the nature of the desired seed bed
C. Interpret the farm's crop program.	- Consideration of the history of the farm and its tillage practices - Interpretation of the crop program - Observance of crop rotation
D. Plan soil adjustment work, if necessary.	- Correction of soil aeration by the appropriate choice of implements, by minimizing the passes over the field, by adjusting the depth of tillage and by choosing crops that favour soil aeration - Correction of soil drainage through land grading, drainage ditches and other reclamation work

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	**SPECIFIC PERFORMANCE CRITERIA**
E. Plan the soil preparation for planting crops.	- Planning of tillage - Choice of the best time for the various operations - Observance of the sequence of tasks and the work schedule - Observance of environmental, and health and safety standards
F. Take soil samples.	- Collection of soil samples according to the method requested by the analysis laboratory - Proper identification of the soil samples
G. Adjust and calibrate tillage implements.	- Observance of the manufacturer's instructions for the adjustment and calibration of tillage implements
H. Carry out the preliminary work for the preparation of the seed bed.	- Relevant choice of tillage implements - Carrying out of tillage work - Sensible use of machinery - Verification of the quality of the work
I. Record the information.	- Accurate identification of the plots and work done - Clarity of information - Accuracy of information

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to determine the physical characteristics of the soil (A):

1. Define the words "structure" and "texture."
2. Know the difference between bulk density and relative density.

Before learning how to define soil preparation needs (B):

3. Describe the main soil classes and their possibilities for use.

Before learning how to interpret the farm's crop program (C):

4. Realize the importance of a crop program.
5. Describe the main stages in soil preparation.
6. Realize the importance of the effects of crops on each other.
7. List the advantages and disadvantages of monoculture and polyculture.

Before learning how to plan soil adjustment work, if necessary (D):

8. Recognize the roles of different tillage implements and the action of their components.

Before learning how to plan the soil preparation for planting crops (E):

9. Describe the different problems of a soil, their causes and the possible corrective measures.
10. Describe soil conservation techniques.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to take soil samples (F):

11. Be familiar with a method for representative collection.

Before learning how to carry out the preliminary work for the preparation of the seed bed (H):

12. Drive a tractor.
13. Realize the importance of the proper distribution of weight for the efficiency of the tractor and optimal utilization of its power.

MODULE 16: HARVESTING, CONDITIONING AND STORING CROP PRODUCTION

CODE: 721 163

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
harvest, condition and store crop production
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using the crop program and records
- Following instructions
- In a real or simulated harvest situation
- Using:
  - harvesting, conditioning and storage machinery and equipment
  - supplies such as twine, bags, and preservatives
- Referring to manufacturers' instructions, user guides for products and other information related to this subject

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Appropriate use of harvesting machinery and material
- Mastery of the techniques of harvesting, conditioning and storage
- Observance of the constraints associated with weather conditions and environmental protection
- Precision, efficiency and attention to detail

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Consult the crop program and records.	- Understanding of the relevant information, such as the size of fields, the planned use for the crops (pasture, dry hay, silage), and specific treatments to be given - Logical understanding of the stages - Determination of the area to be harvested or the rotation of pastures - Organization of the tasks according to time, weather conditions, schedules, labour, machinery, and storage capacities and methods
B. Organize and carry out tasks related to pasturing.	- Careful organization of the pasture program, taking into account the operations planned, the time required, and the labour - Carrying out of pasture maintenance tasks
C. Plan the harvest tasks.	- List of all tasks to be carried out during the harvest - Evaluation of the scope of the tasks related to the harvest - Choice of the time and relevance of the work
D. Adjust, calibrate, and prepare machinery and equipment.	- Adjustment and calibration of equipment according to the manufacturer's instructions - Observance of the appropriate techniques - Proper preparation of equipment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Harvest the crops.	- Observance of the techniques for using the machinery - Observance of safety standards - Observance of standards for the rational use of preservatives - Use of protective clothing - Observance of the order for carrying out the tasks - Thorough cleaning of the equipment to be used for preservative treatments - Verification of the work done
F. Store the crops.	- Accurate description of the various storage methods - Proper preparation of the storage structures and equipment - Proper set-up of equipment such as dryer, hay elevator, silage blower - Proper distribution of the harvested crops to facilitate conservation and subsequent use - Thorough checking of the crops stored in order to detect any abnormal increase in temperature or humidity, any production of moulds, etc.
G. Record the data.	- Inclusion of data such as the harvest dates, the areas harvested, the humidity levels, the yields, the quality of the crops, and the state of the pastures - Accurate and clear data - Appropriate recommendations with regard to changes to be made to the crop program

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to consult the crop program and records (A):

1. Describe the growth stages of forage and cereal plants.
2. Explain the influence of the stage of maturity on the quality of the feed.
3. Understand the effect of harvesting and conservation on the quality of the product.

Before learning how to organize and carry out tasks related to pasturing (B):

4. Describe the damage caused by animals to a pasture during grazing.
5. Explain the need for practising pasture rotation.

Before learning how to adjust, calibrate, and prepare machinery and equipment (D):

6. Explain the importance of adjusting equipment for the quality of the storage and the feeds.
7. Describe the desired physical appearance of the crops harvested at the time of storage.

Before learning how to harvest the crops (E):

8. Explain the operation of the equipment used for harvesting.
9. Describe the method of using preservatives and their action on the plant.

Before learning how to store the crops (F):

10. Explain the process of fermentation and conservation of silages.
11. Describe the effects of moulds on the quality of feeds.

Before learning how to record the data (G):

12. Understand the usefulness of the data relating to the harvest and the storage of forage crops and cereal crops.

MODULE 17: APPLYING CONCEPTS OF FERTILIZATION AND CONDITIONING

CODE: 721 174

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of fertilization and conditioning
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Given cases for the analysis and the calculation of needs
- Using:
  - a plot or a field
  - soil analysis and leaf analysis reports, and photographs for the recognition of deficiencies and toxicity
  - tools and equipment used to apply fertilizers and conditioners

GENERAL PERFORMANCE CRITERIA

- Accurate interpretation of the results of the analysis
- Mastery of the methods of applying fertilizer and conditioners
- Concern for environmental protection
- Accurate understanding of the different types of fertilizers and conditioners, according to their reactions with the soil

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Determine the physical, biological and chemical characteristics of the soil.	- Accurate determination of the physical, biological and chemical characteristics of the soil
B. Explain the roles of the essential minerals in plant growth.	- Differentiation of the different groups of essential mineral elements, that is, the macroelements, microelements and trace elements - Precise description of the role of each element in plant growth
C. Describe the different conditioners and fertilizers.	- Brief description of the main organic conditioners, such as manure, compost, humus and green fertilizer - Brief description of mineral fertilizers - Precise determination of the effects of these substances on the soil and the plants - Accurate determination of their use
D. Interpret the results of soil analysis.	- Accurate interpretation of the results of laboratory analysis - Accurate evaluation of the soil's mineral content - Accurate interpretation of the soil pH

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Calculate the fertilizer, lime and organic material inputs.	- Consideration of the crop's needs - Accurate calculation of the soil's lime requirements - Accurate calculation of the fertilizer inputs - Evaluation of the quantity of organic material to add to the soil
F. Draw up a schedule for the fertilization and conditioning program.	- Consideration of the quantities of inputs, soil type, tillage practices, and season - Consideration of types of application - Proper choice of the fertilizer formula, taking into account the level of availability of the elements
G. Analyze the decisions formulated in the fertilization plan.	- Consideration of all the relevant information - Recognition of the symptoms of deficiency or toxicity of minerals in the main crop plants - Accurate association of symptoms with problems of fertilization and conditioning

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to determine the physical, biological, and chemical characteristics of the soil (A):

1. Explain the roles of soil.
2. Grasp the complexity of the biological and chemical properties of soil.

Before learning how to explain the roles of the essential minerals in plant growth (B):

3. Define the importance of fertilization for yields.
4. Explain the principles of plant nutrition.

Before learning how to describe the different conditioners and fertilizers (C):

5. Define the improvements made by organic matter.
6. Explain the three numbers that make up a commercial fertilizer formula.

Before learning how to interpret the results of soil analysis (D):

7. Understand the importance of the soil analyses and the leaf analyses to be carried out.
8. Be familiar with the soil and plant tissue analysis laboratories.

Before learning how to calculate the fertilizer, lime and organic material inputs (E):

9. Use the fertilization tables.
10. List the products used to correct soil pH.

Before learning how to draw up a schedule for the fertilization and conditioning program (F):

11. Realize the importance of observance of application periods.
12. Realize the importance of environmental protection.

MODULE 18: PLANTING CROPS

CODE: 721 183

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
plant a crop
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using:
  - a crop program and records
  - a plot in a field or on a working farm
  - seeding machinery and equipment (row crop seeder, Brillon-type seeder, seed hoppers)
  - required supplies, such as seed, fertilizer, insecticides and fungicides
  - the required safety equipment
- Referring to the data sheets on pasture, hay and cereal crops

GENERAL PERFORMANCE CRITERIA

- Observance of the planting plan in the crop program
- Observance of work techniques during the planting operations
- Observance of the work schedule and the sequence of operations
- Observance of the characteristics and requirements of species
- Respect for the environment and for occupational health and safety rules
- Appropriate use of machinery and equipment
- Attention to detail and precision
- Mastery of knowledge related to the operations

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Apply a crop planting program.	- Acquisition of the climatic data for the region - Calculation of the size of fields - Proper choice of varieties and stand density - Appropriate choice of supplies such as seed, inoculants, fertilizer and treatment products - Determination of the planting method (e.g. straight seeding, with a nurse crop) - Consideration of soil conservation techniques (direct seeding and so forth)
B. Organize the work.	- Precise determination of the operations to be done - Precise estimate of the time required and the work schedule - Proper organization of tasks in accordance with the choice of crops and the farm's orientation - Preparation of the seeding machinery and equipment - Observance of the sequence of work with implements - Selection and preparation of supplies (quantities required, types of fertilizer and plant health products) - Development of a work and treatment schedule

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Adjust the seed bed preparation and seeding implements.	- Precise calibration of the implements for the preparation of the seed bed, the seed drill and the seed treatment equipment - Observance of calibration techniques - Observance of manufacturer's instructions - Precision of the seed flow, the seeding depth, and the fertilizer doses, if required - Determination of the correct date for seeding
D. Carry out the seed bed preparation and the seeding.	- Treatment of seed, if necessary - Safe handling of equipment and hazardous substances - Proper use of the machinery - Observance of the technique - Observance of the characteristics and development requirements of the species chosen
E. Record the information in the crop records.	- Careful and complete recording of the information related to the seeding, the development of the plants, the conditioners, and the treatments
F. Evaluate the quality of the planting.	- Evaluation of the quality of the seeding of the crop after emergence • Determination of the causes of failures, such as flooding and burns

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to apply a crop planting program (A):

1. Describe the characteristics and requirements of the different species of forage, and hay and pasture crops.
2. Realize the importance of stand density.
3. Measure the areas to be sown.
4. Find information related to seed, fertilizer and plant health products.

Before learning how to organize the work (B):

5. List the operations related to planting the crop.
6. Identify the supplies required.
7. Describe the factors to be considered during preparation of the machinery.

Before learning how to adjust the seed bed preparation and seeding implements (C):

8. Explain the importance of calibration and adjustment of the equipment.
9. List the stages in calibration.

Before learning how to carry out the seed bed preparation and the seeding (D):

10. Describe the dangers inherent in using seeding and treatment equipment.
11. Explain the importance of observing the conditions required for the development of the crop.
12. Explain the need to pay close attention to the success of the planting.
13. Describe the conditions required for the success of a planting.

Before learning how to evaluate the quality of the planting (F):

14. Describe the criteria that indicate the success of a planting.
15. Describe the possible faults in a planting and the factors that come into play.

MODULE 19: IDENTIFYING CROP PESTS

CODE: 721 192

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
identify crop pests
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using:
  - production or demonstration fields
  - videos, slides or photographs
- Following instructions
- Referring to:
  - information from the plant health networks
  - crop protection guides and fact sheets on crop pests

GENERAL PERFORMANCE CRITERIA

- Observance of the chosen approach
- Sense of observation
- Skill using certain techniques, such as the evaluation of the level of infestation
- Good judgment
- Accurate recognition of crop pests
- Adequate and timely identification

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Recognize the main crop pests.	- Recognition of the main pests, such as insects, mites and weeds, and the crops they attack - Classification of harmful insects and weeds according to similar characteristics
B. Describe the characteristics of the main crop pests.	- Description of the life cycles and the means of reproduction, propagation and spread of the pests - Knowledge of the conditions that favour the development of the main pests - Description of the damage that pests cause plants - Consideration of the growth stages of the plant most vulnerable to attack, and the life stages of the pest that are the most damaging for the plant
C. Describe the main symptoms of attack.	- Knowledge of the visual characteristics of normal plant growth - Differentiation between a healthy plant and a damaged plant - Accurate assessment of the indicators of anomalies observed visually on a plant, such as necrosis and perforations - Identification of the variations in symptoms or damage, in accordance with the development of the pest

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Establish a link between the symptoms observed and the pest responsible.	- Consideration of the main enemies of crops and signs left by pests - Accurate association of the symptoms observed and the pest responsible
E. Interpret the results.	- Approximate determination of the seriousness of the infestation or infection, according to the established threshold of tolerance - Accurate interpretation of the actual damage caused to the crop - Comparison of results with those obtained by farmers in the region - Consideration of the history of the farm and the crop history

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe the characteristics of the main crop pests (B):

1. Be familiar with the vulnerability of a crop at a very precise life stage of a pest.
2. Be familiar with the growth patterns and the affinities of the pest.
3. Be familiar with the basic concepts of plant physiology and anatomy.
4. Realize the importance of being familiar with harmful organisms.
5. Briefly describe the damage caused by other things that can harm crops, such as wind, frost, pollution and sun, for purposes of comparison.

Before learning how to describe the main symptoms of attack (C):

6. List the different types of symptoms that show the presence of a pest, such as necrosis, perforations and stunting.

Before learning how to establish a link between the symptoms observed and the pest responsible (D):

7. List the symptoms common to various crop pests.

MODULE 20: MAINTAINING CROPS

CODE: 721 202

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
maintain a crop
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - the crop program and records
  - a working field
  - crop maintenance machinery and equipment
  - protective clothing
  - the required supplies
- Referring to data sheets, manuals, user's guides and plant health information networks

GENERAL PERFORMANCE CRITERIA

- Mastery of maintenance operation techniques
- Observance of the maintenance plans in the crop program
- Observance of occupational health and safety standards
- Precision and attention to detail

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Interpret the maintenance program.	- Consultation of the farm records and knowledge of previous problems - Consideration of tillage practices - Understanding of the relevant data, such as species, varieties, treatments and specific care to be provided
B. Observe the crops and identify growth abnormalities.	- Evaluation of the fields, the drainage, and the health status and growth of the plants - Accurate identification of growth anomalies such as deficiencies, lodging and late maturation - Accurate determination of the degree of competition by weeds, insects and other crop pests - Consideration of the hardiness and sensitivity of the plant or the variety - Knowledge of the plant health information networks

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Prepare the maintenance material and equipment.	- Appropriate choice of equipment such as the cultivator and the sprayer - Precise adjustment and calibration of the equipment (e.g. height of the boom, dosage) - Observance of techniques of leaf and soil spraying - Respect for the environment and occupational health and safety rules - Careful and appropriate organization of the various tasks - Observance of the order for the execution of the tasks
D. Carry out the tasks related to regular maintenance and remedial treatments, if necessary.	- Accurate determination of the treatments, taking into account the various analyses and observations as well as tillage, climatic and pedological constraints - Appropriate choice of treatment products and methods, in accordance with the conventional or organic approach of the farm - Accurate calculation of the dosages for the maintenance and intervention products - Determination of the best times for treatment - Rational, safe use of pesticides and chemical fertilizers - Observance of the order of execution of maintenance tasks - Observance of the manufacturer's instructions

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Evaluate the effectiveness of the treatments and the work.	- Evaluation of the uniformity of the plants and of post-treatment development, and estimate of yield - Verification of the work carried out - Accuracy of judgment in evaluations - Recommendations and changes to be made to the maintenance program
F. Record the data.	- Inclusion of the data required, such as treatment dates, weather information for the day, and products and doses used - Clear information

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to interpret the maintenance program (A):

1. Realize the importance of planning production.

Before learning how to observe the crops and identify growth abnormalities (B):

2. Describe the main symptoms of plant growth anomalies.
3. List the main pests of cereal, hay and pasture crops.

Before learning how to prepare the maintenance material and equipment (C):

4. List the rules for the protection of the health and safety of the users of hazardous substances.
5. Be familiar with the damage that pesticides cause in the environment.

Before learning how to carry out the tasks related to regular maintenance and remedial treatments, if necessary (D):

6. Identify the main types of pesticides and fertilizers.
7. List the standards with respect to organic farming.

Before learning how to evaluate the effectiveness of the treatments and the work (E):

8. Describe the appearance of a normal, healthy plant.

Before learning how to record the data (F):

9. Realize the importance of crop production records.

MODULE 21: APPLYING CONCEPTS OF OXYACETYLENE CUTTING AND ARC WELDING

CODE: 721 213

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply concepts of oxyacetylene cutting and arc welding
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Working on plates and steel parts
- Using:
  - gas welding and cutting machines
  - arc welding machines
  - the appropriate tools, equipment and accessories
  - work sheets specifying the operations to be carried out

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Appropriate use of tools and equipment
- Observance of the techniques
- Work done in accordance with the instructions received
- Appearance and solidity of the welds in accordance with established standards

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Set up the oxyacetylene welding machine.	- Proper choice of accessories and gas - Safe set-up procedure - Set-up in accordance with established rules
B. Perform oxyacetylene cutting operations on metal.	- Correct adjustment of regulator valves - Appropriate choice of tips - Safety measures suited to the working conditions - Use of proper techniques - Clean cut
C. Make shielded metal arc welds.	- Proper preparation of the parts - Proper choice of electrodes - Proper settings for the machine - Proper use of methods and techniques - Appearance and solidity of welds

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to set up the oxyacetylene welding machine (A):

1. Describe ferrous and non-ferrous metals.
2. Be familiar with the physical effects of heat on metals.
3. Describe the principles of autogenous and heterogeneous welding.
4. Describe the gases and material in oxyacetylene welding.
5. Be familiar with the safety rules related to the use of oxyacetylene welding machines.

Before learning how to perform oxyacetylene cutting operations on metal (B):

6. Explain the principles of oxyacetylene cutting.
7. Choose the tips and adjust the torch.
8. Apply the safety rules specific to oxyacetylene cutting.
9. Handle the torch correctly.

Before learning how to make shielded metal arc welds (C):

10. Be familiar with the principles of arc welding.
11. Be familiar with the types of machines and equipment.
12. Be familiar with the electrodes.
13. Be familiar with the safety rules related to arc welding.
14. Prepare the parts to be arc welded.
15. Adjust the settings on the arc welding machine.
16. Do flat welding.
17. Do horizontal and vertical welds.

MODULE 22: MAINTENANCE AND MINOR REPAIRS OF TOOLS AND MACHINERY

CODE: 721 224

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
do maintenance and minor repairs of tools and machinery
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using:
  - agricultural equipment
  - tools from the farm workshop
  - petroleum products and maintenance manuals

GENERAL PERFORMANCE CRITERIA

- Order and cleanliness of work
- Appropriate evaluation methods
- Appropriate work techniques
- Observance of the manufacturers' specifications
- Observance of health and safety rules

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Use and maintain the farm workshop tools.	- Appropriate choice of tool - Proper handling - Order and cleanliness

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Select the maintenance petroleum products for tractors, machines and small engines.	- Appropriate choice of products - Accuracy of mix calculations
C. Plan maintenance of the mechanical equipment on the farm.	- Integrity of maintenance records - Clear data - Realistic planning of work
D. Do maintenance operations and common minor repairs.	- Order and cleanliness - Observance of specifications - Evaluation methods - Proper technique
E. Do minor repairs specific to the farm's equipment.	- Order and cleanliness - Observance of specifications - Evaluation methods - Proper technique

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to use and maintain the farm workshop tools properly (A):

1. Be familiar with and handle common tools.
2. Be familiar with the specifications of combination tools.
3. Be familiar with and handle a drill press, a grinder, portable drills and grinders, and an air compressor and its accessories.
4. Determine the maintenance requirements of the farm workshop tools.
5. Understand the importance of the storage and cleanliness of the farm workshop tools.

Before learning how to select the maintenance petroleum products for tractors, machines, and small engines (B):

6. Be familiar with the service and viscosity classifications of motor, hydraulic, two-stroke and transmission oils.
7. Be familiar with the classifications of greases and their uses.
8. Use the usual mathematical relations to calculate the mixes for two-stroke engines.
9. Be familiar with the cleaning and protection products for farm equipment.

Before learning how to plan maintenance of the mechanical equipment on the farm (C):

10. Write an equipment maintenance record.
11. Define the useful life of equipment.
12. Define the time required for maintenance.
13. Define the storage plan according to order of use.
14. Define the maintenance operations specific to storage.
15. Draw up a list of supplies (e.g. oils, greases, parts).

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to do maintenance operations and common minor repairs (D):

16. Lubricate and grease equipment.
17. Check, repair and adjust drive chains and belts.
18. Check and replace ball bearings.
19. Check, repair and adjust the wheel hubs of equipment.
20. Check and adjust the slip clutches and torque limiters of equipment.
21. Acquire the visual, auditive, tactile and technical methods of evaluation of equipment wear.

Before learning how to do minor repairs specific to the farm's equipment (E):

22. Evaluate the condition of wear plates on soil preparation implements.
23. Replace the wear plates on soil preparation implements.
24. Evaluate wear on a cutter bar.
25. Repair and adjust a cutter bar.
26. Replace the knives and the cutter bar of a forage chopper.
27. Synchronize the feed and the needles of a baler with the plunger.
28. Replace a baler needle.
29. Sharpen the knives of a baler.
30. Sharpen the knives of a forage chopper.

MODULE 23: PERIODIC MAINTENANCE OF TRACTORS

CODE: 721 234

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
do periodic maintenance of tractors
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Working on farm tractors
- Referring to maintenance manuals
- Using:
  - a maintenance table
  - products and spare parts
  - lifting and blocking tools

GENERAL PERFORMANCE CRITERIA

- Order and cleanliness during the work
- Observance of occupational health and safety rules
- Conformity with maintenance manual instructions
- Sense of observation

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Choose the tractor that is appropriate for common operations on the farm.	- Determination of needs in terms of performance, related systems and accessories - Proper choice of tractor, taking into account the size of the fields, the time available, the tasks to be carried out and the implements available on the farm - Accurate knowledge of the different models available, their characteristics, their reputations, and their use and driving conditions
B. Drive the tractor.	- Smooth, safe use of the tractor
C. Use a maintenance manual.	- Selection of relevant information from the manual - Accurate interpretation of the information - Correct reading of the periodic maintenance tables
D. Change oils and filters.	- Appropriate selection of oils and filters - Changing of filters and oils - Adequate maintenance of levels - Proper recording of the new data in the maintenance table
E. Grease equipment.	- Proper selection of the types of grease to use - Proper amount of grease, according to the parts

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
F. Do the checks, adjustments and minor repairs recommended by the maintenance manual.	- Choice of appropriate technique - Adjustment in accordance with recommendations - Appropriate cleaning of parts and systems - Safe lifting and blocking set-ups - Adequate repairs of minor breaks
G. Record the information.	- Accurate recording of the information in the maintenance records, such as dates of oil and filter changes and greasings - Recording of additional information such as hours of work, conditions for use and repair costs - Careful preparation

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to choose the tractor that is appropriate for common operations on the farm (A):

1. Describe the development of motorized equipment on farms.
2. Calculate the power levels at the drawbar, the power take-off and the engine.
3. Identify the main types of farm tractors.

Before learning how to drive the tractor (B):

4. Be familiar with the basic structure of tractors and their specialized attachments.
5. Be familiar with the operation of the mechanical, hydraulic, electrical and electronic systems of tractors.
6. Differentiate the types of motors, transmissions, power take-offs, hydraulic lifts, brakes and final drives.
7. Be familiar with the procedures for cold starting.
8. Be familiar with the safety rules related to using tractors.
9. Describe the minimum checks to make before starting.
10. Describe the functions of the instruments on the instrument panel.
11. Describe the role of each lever or foot pedal.

Before learning how to use a maintenance manual (C):

12. Recognize and select the maintenance operations for the tractor.
13. Explain the data related to periodic maintenance.
14. Explain the different procedures for changing the wheel spacing of the tractor.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to change oils and filters (D):

15. Define the heat conditions for oil changing.
16. Select the appropriate oils and filters.
17. Purge air from the diesel systems.
18. Explain how to dispose of used oil.
19. Explain the procedures for cleaning reusable metal filters.
20. Design a technique that takes into account the information in the maintenance manual.

Before learning how to grease equipment (E):

21. Select the appropriate types of grease.
22. Explain the visual control of the amount of grease.
23. Define the points where an excess of grease could cause damage.

Before learning how to do the checks, adjustments and minor repairs recommended by the maintenance manual (F):

24. Explain the procedures for cleaning radiators and air filters.
25. Select the lifting and blocking implements.
26. Explain the procedures for adjusting the linkages of the brakes and the clutch.
27. Explain the adjustment of a wheel hub.
28. Explain the operating checks for the hitching accessories.
29. Explain the checks for the electrolyte level in a battery.
30. Select the appropriate bulbs and fuses.
31. Explain the method for checking the air pressure in wheels with or without liquid filling.
32. Design a technique that takes into account the information in the maintenance manual.

MODULE 24: REGULAR BUILDING MAINTENANCE

CODE: 721 243

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
do regular maintenance of buildings
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Given practical, common cases or problems that typify the minor work related to the general maintenance of the buildings of a dairy farm
- Following instructions
- Using:
  - the tools, material, equipment and systems that are normally available on a dairy farm
  - all relevant information
- Inside or outside farm buildings

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety standards
- Appropriate use of tools, materials and equipment
- Observance of the various codes that apply to the field of agriculture
- Observance of techniques
- Mastery of knowledge related to the operations

FIRST-LEVEL OPERATIONAL OBJECTIVE

BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Become familiar with the work to be done.	- Accurate interpretation of the preventive maintenance records and the maintenance program - Accurate interpretation of the instructions - Precise description of the main maintenance tasks - Realistic estimate of the cost of the tasks
B. Organize the work.	- Appropriate choice of all the necessary tools, materials and equipment - Logical order of tasks - Demonstration of a sense of organization
C. Prepare the work area.	- Observance of precautions and safety measures - Solid, safe set-up of work equipment and scaffolding
D. Do the normal checks on and around the buildings.	- Complete visual check of the buildings and their surroundings - Precise list of all anomalies and defects observed

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Do minor repairs of roofs, floors and walls.	- Observance of instructions - Appropriate choice of materials such as lumber, roof coverings, insulation and vapour barriers - Correct repair of structures: • solidity of structures and foundations • level, square installation • accurate measurements • observance of the manufacturers' instructions
F. Take action when problems occur in the electrical system.	- Prompt action when there is a defect, fire or accident - Location of defective equipment - Observance of health and safety rules - Complete observance of the Electrical Code
G. Do minor repairs on the plumbing system.	- Location, repair and replacement of defective components - Complete observance of the Plumbing Code - Observance of techniques for replacing and repairing parts and devices: • watertightness of joints • appropriate choice of replacement parts

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Do maintenance on the: • feeding system • milking system • ventilation system • cleaning system	- Location, repair and replacement of defective parts - Observance of manufacturers' instructions - Proper operation of the systems - Evaluation of the performance of the systems
I. Complete the work, clean up and store tools and materials.	- Absence of rubbish on the work site - Cleanliness of the tools and equipment used - Accurate evaluation of the corrective work carried out

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to organize the work (B):

1. Distinguish the respective characteristics and functions of the different hand tools and electrical devices.
2. Identify the different construction materials used and their respective uses.

Before learning how to prepare the work area (C):

3. Describe the main risks and dangers related to the use of tools and equipment in maintenance work on buildings.
4. Describe the main risks and dangers related to the use of hazardous substances.

Before learning how to do the normal checks on and around the buildings (D):

5. Identify the different mechanisms and components of the buildings.
6. Identify the different mechanisms and components of the different lifting systems and materials.
7. Be familiar with the types of vermin to be controlled on the farm.

Before learning how to take action when problems occur in the electrical system (F):

8. Identify the symbols that indicate the components of an electrical system on sketches.
9. Recognize the components of electrical distribution networks and describe their operating principle.
10. Identify the main electrical variables, such as amperage, voltage and power.
11. Master basic knowledge of electricity.

Before learning how to do minor repairs on the plumbing system (G):

12. Identify the symbols that indicate the components of a plumbing system on sketches.
13. Master basic knowledge of plumbing.

MODULE 25: JOB SEARCH TECHNIQUES

CODE: 721 251

Duration: 15 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
use job search techniques
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- In a simulated situation or as part of a search for a practicum position
- Using:
  - a personal evaluation
  - the information provided by the instructor according to possible situations for farm workers
  - various models of résumés and letters of introduction
  - documentation

GENERAL PERFORMANCE CRITERIA

- Quality of oral and written communication

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the steps in a dynamic job search.	- Inclusion of all the steps - Logical sequence - Description of the important elements
B. Write a résumé.	- Quality of the presentation of the document: • legibility of the text • attractive layout of the text • careful presentation - Quality of the contents: • presence of the relevant information: personal data, studies and training, experience, and so forth - Quality of the writing: • style, spelling, and grammar
C. Write a job application letter.	- Quality of the presentation: • appropriate typing or legible writing • attractive layout of the text • neatness - Quality of the contents: • relevance to the job sought - Quality of the writing: • style, spelling and grammar
D. Describe an effective follow-up technique.	- Inclusion of the important elements - Description of the follow-up - Follow-up methods

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to describe the steps in a dynamic job search (A):

1. Define the concept of "dynamic job search."
2. Be familiar with the attitudes required for a successful job search.
3. Explain the different types of interviews.
4. Prepare for an interview.
5. Explain how certain behaviours and attitudes can help or hinder during an interview.

Before learning how to write a résumé (B):

6. Write a personal profile for the job search.
7. Define the purpose of the résumé, taking into account the advantages of its use.

Before learning how to write a job application letter (C):

8. Define the purpose of the follow-up.
9. Understand the importance of assessing the necessity of a follow-up.

MODULE 26: INTRODUCTION TO THE PRACTICE OF THE TRADE

CODE: 721 263

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to
be introduced to the practice of the trade.

SPECIFICATIONS

During this module, the students will:

- Find a practicum position.
- Become familiar with the working environment.
- Evaluate the training received in comparison with the reality perceived during the practicum.

LEARNING CONTEXT

PHASE 1: **Search for a Practicum Position**

- Becoming aware of the practicum procedures.

- Determining, in order of priority, the selection criteria that are necessary for choosing an ideal farm for a practicum position.

- Drawing up a list of farms and describing their characteristics.

- Comparing the selection criteria with the characteristics of the farms.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

- Approaching the farm owners and seeing if there is a possibility for an agreement on a practicum.

- Choosing a practicum position and concluding an agreement with the persons in charge.

PHASE 2: **Participation in the Workplace**

- Becoming familiar with the farm: the family situation, the interpersonal relationships, the history of the business, the operating structure of the farm, the equipment, the machinery, health and safety.

- Observing the occupational tasks or activities that are characteristic of an agricultural enterprise, and participating in them.

- Keeping a log to record observations of the work setting and the activities carried out.

- Participating in the evaluation of the practicum with the teacher and the supervisor on the farm.

PHASE 3: **Comparison of Perceptions with the Realities of the Workplace**

- Discussing the accuracy of their perception of the trade before and after the practicum.

- Noting the aspects of the trade that differ from the training received.

- Discussing the implications of the experience in relation to the training to be acquired.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with the means to make an appropriate choice of practicum position.
- Provide the students with a student practicum guide.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

- Ensure that the person responsible for the student trainee on the farm understands clearly the objectives of the practicum.
- Make it possible for students to observe, participate in and carry out occupational activities.
- Ensure that there is constant supervision of the students by a responsible person on the farm.
- Provide guidance for the students.
- Take action in cases of difficulties or problems.
- Ensure that the student writes a practicum report.
- Maintain close cooperation between the school and the farm that is receiving the student.

PARTICIPATION CRITERIA

PHASE 1:

- Draw up a list of selection criteria.
- Describe the characteristics of at least three farms.
- Compare, using a table, the selection criteria and the characteristics of the different farms.
- Approach the persons at the chosen farm.
- Propose and negotiate an agreement with the person responsible for the practicum at the farm.

PHASE 2:

- Respect the habits of the family environment.
- Respect the restrictions and requirements with regard to certain activities such as the use of equipment and machinery as a student trainee.
- Respect the working hours and policies of the farm when doing work.
- Participate actively in the activities of the farm.
- Show an ongoing interest throughout the practicum.
- Write a log in which a record is made of participation in the occupational activities, and indicate observations on the work setting, thoughts, areas of interest and aptitudes in carrying out the tasks of an agricultural business.
- Evaluate themselves as future workers, in accordance with the training received.
- Participate in the evaluation of the practicum with the teacher and the person in charge of the student on the farm.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

PHASE 3:

- Note the aspects of the trade that differ from the training received or the perception that they had of the trade.
- Discuss the experience and give their opinion on their perception of the trade before and after the practicum.
- Explain to the teacher their perception of themselves as workers using the evaluation report supplied by the person responsible for the practicum.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking any of the activities:

1. Understand the competency to be developed and the suggested training process.

Before undertaking the activities of Phase 1:

2. Write a personal evaluation, stating their preferences, areas of interest and values that should be respected in the choice of a practicum position.

Before undertaking the activities of Phase 2:

3. List the elements to be recorded during the practicum.
4. Describe the method of observation.
5. Determine how to note their observations.
6. Describe the main components of a report.

Before undertaking the activities of Phase 3:

7. List the perceptions to be checked.

MODULE 27: ENTERING THE WORK FORCE

CODE: 721 273

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to
enter the work force.

SPECIFICATIONS

During this module, the students will:

- Negotiate an agreement with the person in charge of the practicum on the farm.
- Carry out occupational activities in the workplace.
- Evaluate their integration as workers.

LEARNING CONTEXT

PHASE 1: **Agreement with the Person in Charge of the Practicum**

- Analyzing the evaluation of the first practicum, *Introduction to the Practice of the Trade*, and modifying, if necessary, the rules of conduct for the current practicum.

- Negotiating and signing the agreement with the person in charge of the practicum on the farm.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: **Entering the Work Force**

- Carrying out occupational tasks and participating in activities that are characteristic of a farm.

- Producing a report on their observations of the work context and the tasks carried out by the business.

- Participating in the evaluation of the practicum with the teacher and the supervisor on the farm.

PHASE 3: **Comparison of Perceptions of the Trade with Their Aptitudes and Areas of Interest**

- Noting the aspects of the trade that differ from the training received or the perception they had of the trade.

- Discussing the accuracy of their perception of the trade.

- Noting the aspects of the trade that differ from their aptitudes, preferences and areas of interest.

- Discussing the implications of the experience on their choice of a future job.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with a student practicum guide and tables for recording information.
- Ensure that the person responsible for the student trainee on the farm understands clearly the objectives of the practicum.
- Ensure that there is constant supervision of the students by a responsible person on the farm.
- Provide guidance for the students.
- Take action in cases of difficulties or problems.
- Provide students with the means to ease their integration into the work force.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

- Make it possible for students to observe, participate in and carry out occupational activities.
- Ensure that the person in charge of the practicum on the farm writes a practicum report on the student trainee.
- Ensure that the student trainee writes a practicum report on the person in charge of the practicum on the farm.
- Maintain close cooperation between the school and farm enterprise that is receiving the student.

PARTICIPATION CRITERIA

PHASE 1:

- Establish the rules of conduct with the person in charge of the practicum.
- Write and negotiate the terms of an agreement with the person in charge of the practicum.

PHASE 2:

- Respect the habits of the family environment.
- Respect the restrictions and requirements with regard to certain activities such as the use of equipment and machinery as a student trainee.
- Respect the working hours and policies of the farm when doing work.
- Participate actively in the activities of the farm.
- Show an ongoing interest throughout the practicum.
- Write a log in which a record is made of participation in the occupational activities, and indicate observations on the working context, and their thoughts, areas of interest and aptitudes in carrying out the tasks of an agricultural business.
- Evaluate themselves as future workers, in accordance with the training received.
- Participate in the evaluation of the practicum with the teacher and the person in charge of the student on the farm.
- Explain to the teacher their perception of themselves as workers using the evaluation report supplied by the person responsible for the practicum.

PHASE 3:

- Note the aspects of the trade that differ from the training received or the perception that they had of the trade.
- Discuss the accuracy of their perception of the trade.
- Note the aspects of the trade that differ from their aptitudes, preferences and areas of interest.
- Discuss the implications of the experience on their choice of a future job.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking any of the activities:

1. Understand the competency to be developed and the suggested training process.

Before undertaking the activities of Phase 1:

2. Write a personal evaluation of the first practicum: *Introduction to the Practice of the Trade*.

Before undertaking the activities of Phase 2:

3. Be familiar with the elements to be recorded during the practicum.
4. Describe the method of observation.
5. Determine how to note their observations.
6. Describe the main components of a report.
7. Explain the stages in a self-evaluation process.

Before undertaking the activities of Phase 3:

8. List the perceptions to be checked.

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