Vocational Training Program

5788

Horticulture and Garden Centre Operations

Training Sector

2

Agriculture and Fisheries

Québec

Vocational Training Program

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Agriculture and Fisheries

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et formation continue

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ISBN 978-2-550-55734-0 (Print version)
ISBN 978-2-550-55735-7 (PDF)

Legal Deposit – Bibliothèque et Archives nationales du Québec, 2009

Acknowledgments

The Ministère de l'Éducation, du Loisir et du Sport would like to thank the many people working in the field and in the education community who participated in the development of this vocational training program, in particular the following individuals.

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Maryse Dupont
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Ghislain Fournier
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Table of Contents

Introduction to the Program

In vocational training, a program of study presents the competencies required to practise a given trade or occupation at entry level on the job market. The training provided allows students to acquire a degree of versatility that will be useful in their career and personal development.

A program is a coherent set of competencies to be developed. It outlines the knowledge and broad orientations to be favoured during training. The competencies correspond to the tasks of the trade or occupation or to activities related to work, vocational or personal life, depending on the case. Learning is acquired in a specific achievement context and targets the ability to act, succeed and evolve.

According to the Education Act[1], "every program shall include compulsory objectives and contents and may include optional objectives and contents that shall be enriched or adapted according to the needs of students who receive the services." For behavioural competencies, the compulsory components include the statement of the competency, the elements of the competency, the achievement context and the performance criteria; for situational competencies, they include the corresponding components.

For information purposes, programs also provide a grid of competencies, educational aims, a summary of competency-related knowledge and know-how, and guidelines. They also specify the suggested duration of each competency. All optional components of a program may be enriched or adapted according to the needs of the students, the environment and the workplace.

Program Components

Program Goals

Program goals consist of the expected outcome at the end of training as well as a general description of a given trade or occupation. They also include the four general goals of vocational training.

Educational Aims

Educational aims are broad orientations to be favoured during training in order to help students acquire intellectual or motor skills, work habits or attitudes. Educational aims usually address important aspects of career and personal development that have not been explicitly included in the program goals or competencies. They serve to orient appropriate teaching strategies to contextualize students' learning, in keeping with the dimensions underlying the practice of a trade or occupation. They help guide educational institutions in implementing the program.

Competency

A competency is the ability to act, succeed and evolve in order to adequately perform tasks or activities related to one's working or personal life, based on an organized body of knowledge and skills from a variety of fields, perceptions, attitudes, etc.

A competency in vocational training can be defined in terms of a behaviour or a situation, and includes specific practical guidelines and requirements for learning.

1. Behavioural Competency

A behavioural competency describes the actions and the results expected of the student. It consists of the following features:

1. Education Act, R.S.Q., c.1-13.3, ss 461.

- The *statement of the competency* is the result of the job analysis, the orientations and general goals of vocational training and other determinants.
- The *elements of the competency* correspond to essential details that are necessary in order to understand the competency and are expressed in terms of specific behaviours. They refer to the major steps involved in performing a task or to the main components of the competency.
- The *achievement context* corresponds to the situation in which the competency is exercised at entry-level on the job market. The achievement context attempts to recreate an actual work situation but does not describe a learning or evaluation situation.
- The *performance criteria* define the requirements to be respected. They may refer to elements of the competency or to the competency as a whole. When associated with a specific element, performance criteria are used to judge whether a competency has been acquired. When associated with the competency as a whole, the criteria describe the requirements for performing a task or activity and provide information on the expected level of performance or the overall quality of a product or service.

2. Situational Competency

A situational competency describes the situation in which students are placed to acquire learning, and allows for actions and results to vary from one student to another. It consists of the following features:

- The *statement of the competency* is the result of the job analysis, the orientations and general goals of vocational training and other determinants.
- The *elements of the competency* outline the essential aspects of the competency and ensure a better understanding of the competency with respect to the expected outcome. The elements of the competency are fundamental to the implementation of the learning situation.
- The *learning context* provides a broad outline of the learning situation designed to help the students develop the required competency. It is normally divided into three key phases of learning: information, participation and synthesis.
- The *instructional guidelines* provide reference points and means for teachers to ensure that learning takes place and that the context in which it occurs is always the same. These guidelines may include general principles or specific procedures.
- The *participation criteria* describe requirements that the students must meet when participating in learning activities. 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 situation.

Competency-Related Knowledge and Know-How

Competency-related knowledge and know-how together with related guidelines, are provided for information purposes. Competency-related knowledge and know-how define the essential and meaningful learning that students must acquire in order to apply and continue to develop the competency. They are in keeping with the job market and are accompanied by guidelines that provide information about the field of application, level of complexity and learning content. They generally encompass learning associated with knowledge, skills, strategies, attitudes, perceptions, etc.

Duration

The total duration of the program is compulsory and must be observed. It consists of teaching time, which includes time for the evaluation of learning and for enrichment or remedial activities, depending on the students' needs. The duration indicated for a given competency refers to the amount of time needed to develop the competency.

The amount of teaching time corresponds to the amount of time allotted to training, which is established during program development as the average amount of time needed to acquire a competency and evaluate learning. This duration is helpful in organizing training.

Credit

A credit is a unit used for expressing the quantitative value of each competency. One credit corresponds to 15 hours of training.

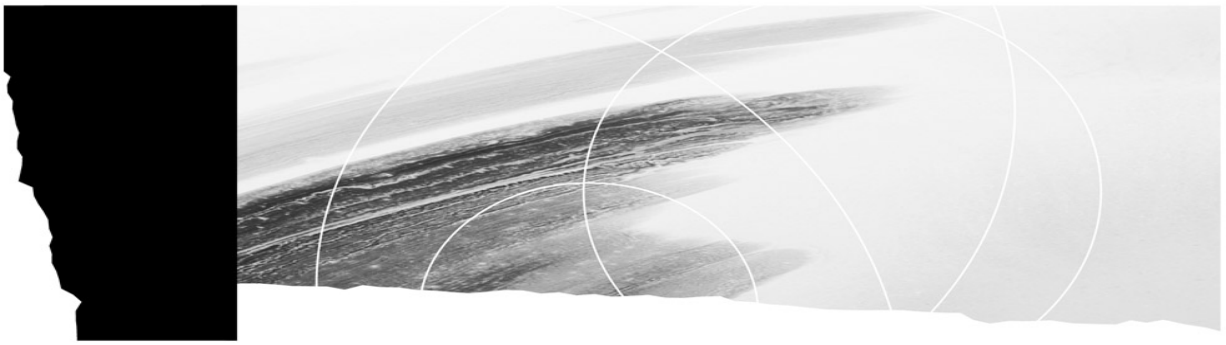
Aspects of Program Implementation

Program-Based Approach

The program-based approach is founded on a comprehensive view of a program of study and its components (e.g. goals, educational aims, competencies). It requires concerted action among all players involved, from the initial stages of program design and development, to program implementation and evaluation. It consists in ensuring that all of the actions and activities proposed are based on the same aims and take into account the same orientations. For students, the program-based approach makes training more meaningful as it presents learning as a coherent whole.

Competency-Based Approach

In vocational training, the competency-based approach is based on a teaching philosophy that is designed to help students mobilize their own individual sets of resources in order to act, succeed and evolve in different contexts, according to established performance levels with all the required knowledge and know-how (e.g. skills, strategies, attitudes, perceptions). The competency-based approach is carried out in situations that are relevant to the students' working life and personal life.



5788	**Horticulture and Garden Centre Operations**

Year of approval: 2008

Certification:	Diploma of Vocational Studies
Number of credits:	89 credits
Number of competencies:	25 competencies
Total duration:	1 335 hours

To be eligible for admission to the *Horticulture and Garden Centre Operations* program, candidates must meet one of the following requirements:

- Persons holding a Secondary School Diploma or its recognized equivalent.

OR

- Persons who are at least 16 years of age on September 30 of the school year in which their training is to begin and have earned the Secondary IV credits in language of instruction, second language and mathematics in the programs of study established by the Minister, or have been granted recognition of equivalent learning.

OR

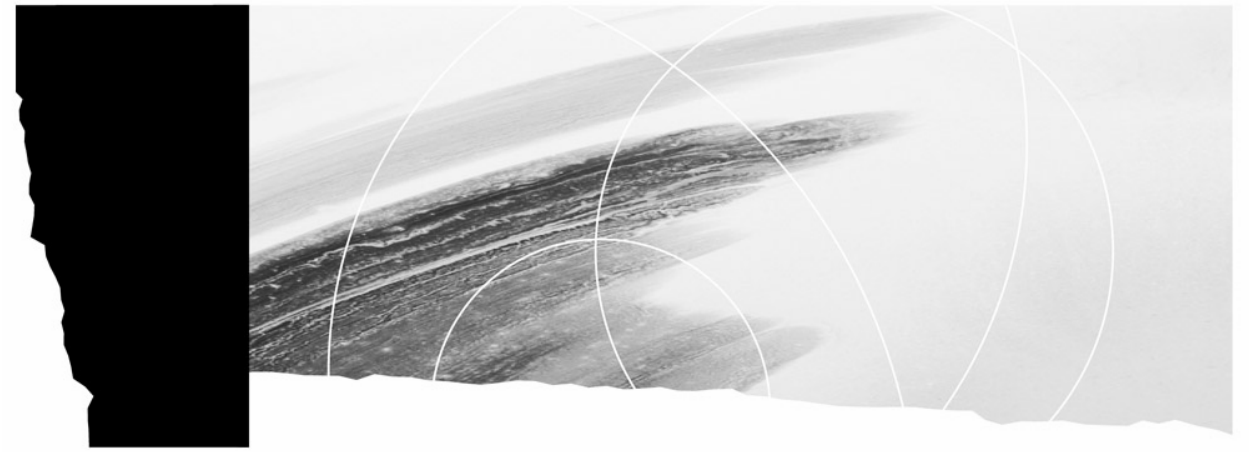
- Persons who are at least 18 years of age upon entry into the program and have the following functional prerequisites: the successful completion of the General Development Test and the course in language of instruction ENG-3070-3, or recognition of equivalent learning.

OR

- Persons having earned Secondary III credits in language of instruction, second language and mathematics in the programs of study established by the Minister and who will continue their general education courses concurrently with their vocational training in order to obtain the credits they are missing among the following: Secondary IV language of instruction, second language and mathematics in the programs of study established by the Minister.

The duration of the program is 1 335 hours, which includes 870 hours spent on the specific competencies required to practise the trade or occupation and 465 hours on general, work-related competencies. The program of study is divided into 25 competencies which vary in length from 15 to 105 hours. The total hours allocated to the program include time devoted to teaching, evaluation of learning and enrichment or remedial activities.

Competency	Code	Number	Hours	Credits
Trade and Training Process	705142	1	30	2
Botanical Principles	705156	2	90	6
Health and Safety on Construction Sites	754992	3	30	2
Pruning	705163	4	45	3
Soil Amendment and Fertilization	705176	5	90	6
Planting and Transplanting	705183	6	45	3
Plant Health Problems	705196	7	90	6
Plant Production	705206	8	90	6
Edible Plants	705213	9	45	3
Summer Maintenance	705224	10	60	4
Fall Maintenance	705235	11	75	5
Outdoor Pesticide Use	704592	12	30	2
Spring Maintenance	705245	13	75	5
Plans and Specifications	705252	14	30	2
Pesticide Use in Protected Cultivation	705261	15	15	1
Information Search	705272	16	30	2
Indoor Plants	705286	17	90	6
Communication in the Workplace	705291	18	15	1
Designing a Plan	705307	19	105	7
Machinery and Equipment	705312	20	30	2
Lawns	705324	21	60	4
Sales Areas	705333	22	45	3
Selling Products	705342	23	30	2
Job Search	705351	24	15	1
Entering the Workforce	705365	25	75	5



Part I

Program Goals

Educational Aims

Statements of the Competencies

Grid of Competencies

Harmonization

Program Goals

The *Horticulture and Garden Centre Operations* program prepares students to practise the trade or occupation of plant-care worker.

Plant-care workers work in a variety of settings: for public or private organizations that manage parks, green spaces, gardens and golf courses; for horticultural consulting firms; in specialized garden centres; in the horticultural department of department stores.

Plant-care workers maintain parks and green spaces by producing, maintaining and propagating plants as well as installing flower beds, mass plantings, mosaics, containers and other floral displays. In horticulture, their work consists in preparing soils; seeding, planting and maintaining plants; and preparing and applying plant protection products.

In the retail industry, plant-care workers are often referred to as sales consultants. Their work involves receiving merchandise and displaying living or inert horticultural products; maintaining outdoor and indoor plants; monitoring and maintaining designated sales areas (annuals, perennials, shrubs, etc.); analyzing and responding to customer inquiries by providing information; selling horticultural products or referring customers to specialists; and participating in general retail operations, such as inventory control, sales monitoring and customer needs analysis.

The program goals of the *Horticulture and Garden Centre Operations* program are based on the general goals of vocational training. These goals are as follows:

- To help students develop effectiveness in the practice of a trade or occupation, that is:
  - to teach students to perform roles, functions, tasks and activities associated with the trade or occupation upon entry into the job market
  - to prepare students to progress satisfactorily on the job (which implies having the technical and technological knowledge and skills in such areas as communication, problem solving, decision making, ethics, health and safety)
- To help students integrate into the work force, that is:
  - to familiarize students with the job market in general, and with the specific context of their chosen trade or occupation
  - to familiarize students with their rights and responsibilities as workers
- To foster students' personal development and acquisition of occupational knowledge, skills, perceptions and attitudes, that is:
  - to help students develop their autonomy and ability to learn, and acquire effective work methods
  - to help students understand the principles underlying the techniques and the technology used in the trade or occupation
  - to help students develop self-expression, creativity, initiative and entrepreneurial spirit
  - to help students adopt the attitudes required to successfully practise the trade or occupation, and instill in them a sense of responsibility and a concern for excellence
- To promote job mobility, that is:
  - to help students develop positive attitudes toward change
  - to help students develop the means to manage their careers by familiarizing them with entrepreneurship

Educational Aims

The aim of the *Horticulture and Garden Centre Operations* program is to help students develop attitudes and behaviours that representatives from education and the field deem essential to the practice of the trade or occupation:

- Develop professional ethics and respect for others.
- Develop autonomy, initiative and a sense of responsibility.
- Develop the ability to reason and identify horticultural needs and problems.
- Develop the knowledge and know-how that will allow them to adapt their actions and decisions to different work situations and environments.

Statements of the Competencies

List of Competencies

- Determine their suitability for the trade and the training process.
- Analyze plants using botanical principles.
- Ensure health, safety and physical well-being on construction sites.
- Prune woody plants.
- Amend and fertilize soils.
- Plant and transplant plants.
- Remedy plant health problems.
- Produce plants.
- Maintain edible plants.
- Perform summer maintenance tasks in a garden.
- Perform fall maintenance tasks in a garden.
- Use pesticides outdoors.
- Perform spring maintenance tasks in a garden.
- Interpret plans and specifications.
- Use pesticides in protected cultivation.
- Look for horticultural information.
- Maintain indoor and potted flowering plants.
- Communicate in the workplace.
- Design a plan for a garden.
- Maintain horticultural machinery, tools and equipment.
- Start and maintain lawns.
- Organize sales and storage areas.
- Sell horticultural products and equipment.
- Use job search techniques.
- Enter the workforce.

Grid of Competencies

The grid of competencies shows the relationship between general competencies, which correspond to work-related activities, and specific competencies, which are required to practise the particular trade or occupation, as well as the major steps in the work process.

The general competencies appear on the horizontal axis and the specific competencies, on the vertical axis. The symbol (○) indicates a correlation between a general and a specific competency. The symbol (△) indicates a correlation between a specific competency and a step in the work process. Shaded symbols indicate that these relationships have been taken into account in the acquisition of specific competencies. 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 presents the specific competencies in the order in which they should be acquired and serves as a point of departure for determining how all of the competencies will be taught.

GRID OF COMPETENCIES

HORTICULTURE AND GARDEN CENTRE OPERATIONS

SPECIFIC COMPETENCIES	Competency number	Type of competency	Duration (in hours)	GENERAL COMPETENCIES: Analyze plants using botanical principles	Ensure health, safety and physical well-being on construction sites	Amend and fertilize soils	Remedy plant health problems	Use pesticides outdoors	Interpret plans and specification	Use pesticides in protected cultivation	Look for horticultural information	Communicate in the workplace	Maintain horticultural machinery, tools and equipment	Use job search techniques	WORK PROCESS: Become familiar with work instructions	Plan the work to be don	Prepare the tools, equipment and materials	Do the work	Verify the quality of the work done	Clean and tidy up
Competency number				2	3	5	7	12	14	15	16	18	20	24						
Type of competency				b	s	b	b	b	b	b	b	s	b	b						
Duration (in hours)				90	30	90	90	30	30	15	30	15	30	15						
Determine their suitability for the trade and the training process	1	s	30	○	○	○	○	○	○	○	○	○	○	○	△	△	△	△	△	△
Prune woody plants	4	b	45	●	●	○	○	○	○	○	○	○	○	○	▲	▲	▲	▲	△	▲
Plant and transplant plants	6	b	45	●	●	●	○	○	○	○	○	○	○	○	▲	△	▲	▲	△	▲
Produce plants	8	b	90	●	●	●	●	○	○	○	○	○	○	○	▲	▲	△	▲	△	▲
Maintain edible plants	9	b	45	●	●	●	●	○	○	○	○	○	○	○	▲	▲	△	▲	△	△
Perform summer maintenance tasks in a garden	10	b	60	●	●	●	●	○	○	○	○	○	○	○	▲	▲	△	▲	▲	△
Perform fall maintenance tasks in a garden	11	b	75	●	●	●	●	○	○	○	○	○	○	○	▲	▲	△	▲	▲	▲
Perform spring maintenance tasks in a garden	13	b	75	●	●	●	●	●	○	○	○	○	○	○	▲	▲	△	▲	▲	△
Maintain indoor and potted flowering plants	17	b	90	●	●	●	●	○	●	●	●	○	○	○	▲	▲	△	▲	▲	△
Design a plan for a garden	19	b	105	●	○	●	○	○	●	○	●	●	○	○	▲	▲	△	▲	▲	△
Start and maintain lawns	21	b	60	●	●	●	●	●	○	○	●	●	●	○	▲	▲	△	▲	▲	△
Organize sales and storage areas	22	b	45	●	●	●	●	●	○	●	●	●	○	○	▲	▲	△	▲	▲	▲
Sell horticultural products and equipment	23	b	30	●	○	○	●	○	○	○	●	●	○	○	▲	△	△	▲	▲	△
Enter the workforce	25	s	75	○	○	○	○	○	○	○	○	○	○	○	△	△	△	△	△	△

Harmonization

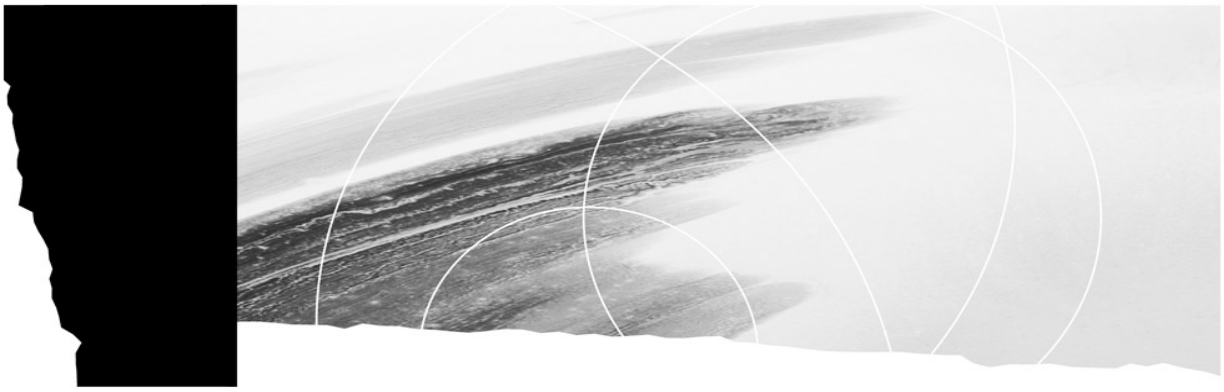
The Ministère de l'Éducation, du Loisir et du Sport harmonizes its vocational and technical programs by establishing similarities and continuity between secondary- and college-level programs within a particular sector or between sectors in order to avoid overlap in program offerings, to recognize prior learning and to optimize the students' progress.

Harmonization establishes consistency between training programs and is especially important in ensuring that the tasks of a trade or occupation are clearly identified and described. Harmonization makes it possible to identify tasks requiring competencies that are common to more than one program. Even if there are no common competencies, training programs are still harmonized.

Harmonization is said to be "inter-level" when it focuses on training programs at different levels, "intra-level" when it focuses on programs within the same educational level, and "inter-sector" when carried out between programs in various sectors.

An important aspect of harmonization is that it allows the common features of competencies to be identified and updated as needed. Common competencies are those that are shared by more than one program; once acquired in one program, they can be recognized as having been acquired in another. Competencies with exactly the same statement and elements are said to be identical. Common competencies that are not identical but have enough similarities to be of equal value are said to be equivalent.

Harmonization of the *Horticulture and Garden Centre Operations* program has resulted in identifying competencies that are shared with other programs. Detailed information on the harmonization of this program and its results is presented in the document entitled *Tableaux d'harmonisation, Horticulture et jardinerie*.



Part II

Program Competencies

Trade and Training Process	Code: 705142

Competency 1 Duration 30 hours Credits 2

Situational Competency

Statement of the Competency

Determine their suitability for the trade and the training process.

Elements of the Competency

- Understand the reality of the trade.
- Understand the training process.
- Assess and confirm their career choice.

Learning Context

Information Phase

- Learning about the characteristics of the job market in horticulture: types of businesses, types of products or services, new trends, job prospects, remuneration and advancement possibilities.
- Learning about the nature and requirements of the job: tasks, working conditions, regulations and standards governing the industry.
- Presenting the information gathered and their perception of the trade during a group discussion: advantages, disadvantages and requirements.

Participation Phase

- Discussing the skills, attitudes, aptitudes and knowledge required to practise the trade.
- Discussing the relationship between the *Horticulture and Garden Centre Operations* program and the work of plant-care workers.
- Discussing the relationship between the *Horticulture and Garden Centre Operations* program and related college and university programs.
- Expressing their views on the training process.

Synthesis Phase

- Producing a report in which they:
  - describe their preferences, aptitudes and interests with respect to the trade
  - assess and confirm their career choice by comparing aspects and requirements of the trade with their own preferences, aptitudes and interests

Instructional Guidelines

- Create a climate that fosters the students' personal development and entry into the job market.
- Encourage all students to engage in discussions and to express themselves.
- Motivate the students to take part in the suggested activities.
- Help the students acquire an accurate perception of the trade.
- Provide the students with the means to assess their career choice honestly and objectively.
- Organize a field trip to a business that is representative of the industry.
- Make available all pertinent documentation: publications on the trade, training programs, books, etc.
- Organize meetings with trade specialists.
- Make the students aware of the need to keep developing their knowledge and skills, by keeping up with trends in horticulture and garden centre operations.

Participation Criteria

Information Phase

- Gather information on most of the topics to be covered.
- Adequately express their views on the trade at a group meeting, making connections with the information gathered.

Participation Phase

- Give their opinion on some of the requirements they will have to meet in order to practise the trade.
- Thoroughly examine the documents available.
- Listen attentively to explanations.
- Adequately express their views on the training program at a group meeting, making connections with the trade.

Synthesis Phase

- Produce a report in which they:
  - briefly describe their preferences, interests and aptitudes
  - explain their career choice, clearly making the required connections
  - confirm their career choice

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each phase of the learning context, along with their attendant guidelines.

Information Phase

• Situate the competency with respect to the work of a plant-care worker and sales consultant and to the *Horticulture and Garden Centre Operations* program.	Reason for the competency; connections with the other competencies; course outline
• Be receptive to information about the trade and training program.	Conditions of receptiveness: visual attention, auditory attention, favourable climate, interest, concentration, and physical and psychological well-being

• Apply the main rules governing effective group discussions.	Main rules: participating, waiting one's turn to speak, staying on topic, listening to others, being open to other viewpoints
• Distinguish different stakeholders in horticulture and garden centre operations.	Government departments, associations, federations, research institutes, horticultural societies, workforce sectoral committee
• Look for information about the nature and requirements of the job.	Sources of information Information on standards and regulations, tasks, positions, sanitary conditions, required aptitudes and skills, working conditions Method of organization and operation, types of products and services offered by businesses representative of the industry
Participation Phase	
• Look for information about skills, attitudes, aptitudes and knowledge required to practise the trade.	Distinction between skills, attitudes, aptitudes and knowledge Dexterity, physical strength, patience, creativity, memory: knowledge of plants, etc.
• Look for information about the *Horticulture and Garden Centre Operations* program and how it relates to the work of plant-care workers.	Information on the training process: program objectives, connections between competencies, instructional approach, material organization, evaluation methods, certification of studies
Synthesis Phase	
• Discuss their preferences, aptitudes and interests with respect to the trade.	Parallels between the reality of the trade, the training program and their personal situation Arguments justifying their career choice
• Produce a report.	Brief description of their preferences, interests and aptitudes Confirmation of their career choice

Botanical Principles	Code: 705156

Competency 2 Duration 90 hours Credits 6

Behavioural Competency

Statement of the Competency	Achievement Context
Analyze plants using botanical principles.	• In situations requiring the application of botanical principles to horticultural practices: planting and transplanting, transportation, fertilization, watering, winter protection, propagation, pruning, plant protection, etc. • Using plants or plant organs, plant identification guides or keys, and reference documents

Elements of the Competency	Performance Criteria
1. Describe the external structures of the major plant organs.	• Accurate identification and location of the major plant organs • Accurate determination of the morphological characteristics of the major plant organs (in order to facilitate their identification) • Accurate determination of the function of each organ
2. Describe the internal structures of the major plant organs.	• Accurate determination of the main cell functions • Accurate determination of the location and function of the main tissues • Accurate determination of the anatomical characteristics of the major plant organs
3. Determine the different stages of plant development.	• Accurate determination of the main stages of plant development
4. Classify plants.	• Accurate classification into the major families, in accordance with the rules of botanical nomenclature and taxonomy • Accurate classification, based on the nutritional model, water requirements and life cycle of plants • Proper use of identification tools
5. Make connections between plant morphology, anatomy, physiology and growth.	• Relevant connections made between the plants' morphological and anatomical characteristics, their main physiological processes, and optimal growth and reproduction
6. Make connections between horticultural applications of genetic improvement, propagation and plant diversity.	• Brief description of the basic rules of genetic improvement • Relevant connections made between current genetic improvement practices and plant diversity

7. Determine the main effects of plants on the environment.	• Accurate determination of plants' main effects on ecological balance
	For the competency as a whole:
	• Use of appropriate terminology • Clear, accurate explanations of the main physiological processes • Respect for the environment

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Describe the external structures of the major plant organs.
2. Describe the internal structures of the major plant organs.

• Identify the function of each plant organ.	Main components and functions of the following organs: root, stem, leaf, flower, fruit, seed (e.g. components of roots: primary and secondary root structure, lateral roots, root cap, elongation zone, maturation zone, root-hair zone and suberization zone; functions of roots: support, anchorage, soil stabilization, water and mineral uptake, storage)
• Identify plants' morphological characteristics in order to identify plants.	Distinction between different types of roots, stems, leaves, flowers, fruits, seed (e.g. types of roots: taproots, fibrous, creeping, tuberous, adventitious roots); main components and cell functions
• Identify the anatomical characteristics of the major plant organs.	Main components and cell functions Location and function of the main tissues of plant organs

3. Determine the different stages of plant development.

• Analyze the life cycle of plants.	Distinction between each stage of development, from seed to seed Comparison of the morphology and anatomy of monocotyledons (monocots) and dicotyledons (dicots), at each developmental stage Growth regulator
• Analyze the germination process.	Conditions and stages of germination

4. Classify plants.

• Identify universal and common plant classification systems.	Rules of nomenclature and taxonomy Kingdom, phylum (or division), class, order, family, genus, species, cultivar, etc. Spelling Nutrition: autotrophs, heterotrophs, saprophytes, parasites, etc. Water requirements: xerophytes, mesophytes, hydrophytes Life cycle: annuals, biannuals and perennials Distinction: herbaceous and woody Plant classification and sections in garden centres Distinction between different types of habits
• Identify the major plant families.	Connections between morphology, anatomy and physiology, and classification by plant family Approximately 30 families
• Identify different categories of plants using genus and species names.	Use of main Latin names Connections between Latin names and nomenclature Use of identification keys and reference documents (e.g. *Flore laurentienne*) Plant identification

5. Make connections between plant morphology, anatomy, physiology and growth.

• Refer to physiological processes.	Respiration, transpiration, photosynthesis, guttation, absorption, nutrition, growth, reproduction
• Make connections between the main physiological processes and different horticultural practices.	Morphology in relation to physiology and specific needs (e.g. succulents and transpiration, water requirements, sunlight) (e.g. cutting and dividing; stems with knots and propagation by cuttings) Anatomy with respect to propagation: cambium and grafting or layering, etc. Pruning, plant protection, fertilization, watering, winter protection, protection during transport, relative humidity, temperature, etc.

6. Make connections between horticultural applications of genetic improvement, propagation and plant diversity.

• Identify simple crossbreeding situations.	Main laws of genetics Main concepts Propagation methods used to crossbreed plants
• Identify the consequences of crossbreeding on propagation.	Aims, advantages and disadvantages of crossbreeding in horticulture Genetically modified organisms (GMOs) Mutation

7. Determine the main effects of plants on the environment.

• Identify the main components of a terrestrial ecosystem in a physical environment.	Cycle of matter in relation to the dynamics of an ecosystem Connections between the main components of an ecosystem and their function in the human food chain Definition of ecological balance
• Identify processes of pollution and ecological imbalance.	Waste production and the biosphere's ability to recycle chemicals Consequences of various human practices and activities
• Identify the function of plants in the environment.	Function of plants with respect to soil stabilization, oxygen production, filtering action of roots, mineral salt transformation, impact on climate variables, satisfaction of animal and human needs, etc.

Health and Safety on Construction Sites	Code: 754992

Competency 3 Duration 30 hours Credits 2

Situational Objective

Statement of the Competency

Ensure health, safety and physical well-being on construction sites.

Elements of the Competency

- Adopt a responsible attitude regarding dangers to personal health and safety.
- Be aware of the importance of complying with occupational health and safety standards and regulations.
- Recognize dangerous situations or unsafe behaviour and applicable preventive measures.

Learning Context

Information Phase

- Learning about the risks inherent in construction sites.
- Learning about the health and safety standards and regulations on construction sites.
- Learning about emergency measures.
- Reflecting on the importance of developing occupational health and safety skills.

Participation Phase

- Experiencing situations in which it is necessary to prevent risks and eliminate hazards associated with the environment, facilities, equipment, machinery, tools, materials, energy sources, etc.
- Participating in activities that allow students to recognize risks associated with transporting loads and working in constricted postures.
- Participating in activities that allow students to recognize safety signs and symbols (e.g. hazardous products, roadwork, transportation of hazardous materials).
- Comparing different high-risk behaviours observed on a construction site and identifying the basic principles underlying safe behaviour.

Synthesis Phase

- Producing a report containing:
  - a summary of their newly acquired knowledge and skills
  - an evaluation of their attitude toward occupational health and safety
  - objectives and means of improving their behaviour

Instructional Guidelines

- Provide the required sources of information.
- Invite, as needed, resource persons specialized in certain areas of occupational health and safety to speak to the class.
- Make effective use of audiovisual materials.
- Make extensive use of learning situations that are representative of conditions on construction sites.
- Ensure that students avoid dangerous behaviours during simulation exercises.
- Encourage all students to participate in discussions.
- Guide the students' evaluation process by providing them with appropriate tools (e.g. questionnaire) to help them analyze their experience and set objectives.

Participation Criteria

Information Phase

- Consult available sources of information.
- Describe the advantages of complying with health and safety standards and regulations.

Participation Phase

- Participate responsibly in the suggested activities.
- State the principles underlying safe behaviour.
- List the risks inherent in construction sites and the applicable preventive measures.

Synthesis Phase

- Produce a report containing:
  - a summary of their newly acquired knowledge and skills
  - an evaluation of their attitude toward occupational health and safety
  - objectives and means of protecting their health, safety and physical well-being, as well as that of others, on a construction site

Suggestions for Competency-Related Knowledge, Skills, Attitudes and Perceptions

The following is a list of knowledge, skills, attitudes, perceptions and guidelines related to the learning context.

Information Phase

- Be receptive to information on health and safety on construction sites.

- Recognize the most common dangers to health, safety and physical well-being on construction sites.

- Recognize the sources of information relating to health and safety on construction sites and find information in these sources.

Roles and responsibilities in matters relating to health and safety on construction sites
Regulatory framework governing occupational health and safety

• Identify the advantages of complying with health and safety standards and regulations.	Prevention of illness and accidents Importance of wearing personal protective equipment
Participation Phase	
• Associate the risks inherent in construction sites and the trade with applicable preventive measures.	Risks inherent in the constructive site itself and in the practice of the trade Preventive measures to apply according to the risks involved Workplace Hazardous Materials Information System (WHMIS)

Pruning	Code: 705163

Competency 4 Duration 45 hours Credits 3

Behavioural Objective

Statement of the Competency	Achievement Context
Prune woody plants.	• Based on instructions provided by the customer or the person in charge • Using ornamental or edible plants that can be pruned from the ground: shrubs and rosebushes; hedges and climbing plants; young trees (trunks 150 mm or less in diameter); evergreens • Using the necessary tools and equipment, and appropriate personal protective equipment

Elements of the Competency	Performance Criteria
1. Plan the work to be done.	• Appropriate choice of plants to prune, in accordance with needs • Appropriate determination of pruning or cutting technique to use, based on the type of plant, its needs and the pruning period
2. Prepare the pruning tools.	• Appropriate choice of tools to use, based on the type of plant and the pruning or cutting technique • Correct application of sharpening technique • Clean cutting blade • Correct adjustment of tools • Disinfection of tools according to current standards
3. Cut branches, stems and twigs.	• Accurate determination of the location of the cut, based on needs • Proper cutting angle • Clean cut • Absence of stubs or pruning wounds
4. Prune plants to direct growth.	• Proper maintenance of main leader or main structure of the trunk, branches or stems, based on the species to shape • Observance of the plant's natural development • Balanced distribution of branches or stems • Appropriate removal of the tips of new shoots
5. Thin the crown of plants.	• Appropriate removal of crossed or unsuitable stems or branches • Appropriate preservation of the form and dimensions of the aerial part

6. Cut back certain plants.	• Shortening of branches and twigs of certain plants
7. Prune plants to rejuvenate them.	• Observance of the plant's natural form to promote progressive rejuvenation • Appropriate elimination of oldest stems to promote progressive rejuvenation • Drastic cutting back of all stems to regenerate certain plants (coppicing)
8. Prune hedges.	• Trimming back of current year's growth throughout the entire hedge • Uniform pruning • Hedge's overall form: wider at base and narrower on top
9. Dispose of pruning debris.	• Proper disposal of contaminated pruning debris • Appropriate recycling of uncontaminated pruning debris
	For the competency as a whole:
	• Compliance with occupational health and safety rules • Compliance with current standards • Observance of the characteristics and requirements of different species • Mastery of the work technique • Proper use of tools and equipment • Cleanliness and concern for the quality of the work • Respect for the living materials used • Compliance with instructions • Compliance with current environmental regulations

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Plan the work to be done.

• Determine pruning needs.	Use of technical terms specific to pruning Inspection of plants and identification of those requiring pruning

• Determine the pruning technique to use, based on the requirements of the situation.	Association between different cutting or pruning techniques and circumstances: the plant species, its developmental stage, the pruning period, frequency, etc. Justification of the pruning technique selected
2. Prepare the pruning tools.	
• Select the tool(s), based on the pruning technique.	Description of different tools Techniques and conditions for use Connections between plant species, pruning techniques used and the appropriate tool
• Prepare the tools.	Application of sharpening, adjustment and disinfection techniques
3. Cut branches, stems and twigs.	
• Determine where to make the cut, based on needs.	Distinction between proper and improper cuts Location of cuts Consequences of improper cuts
• Apply different techniques for cutting branches, stems and twigs.	Adaptation of the technique used, based on the species, desired result, pruning period and current standards Standards based on species Minor wound repairs and reshaping
4. Prune plants to direct growth.	
• Maintain the dominant leader.	Identification of a strong main stem Elimination, shortening, or thinning of competing branches Creation of new dominant leader when existing leader is too weak or broken
• Determine the distribution of primary branches.	Determination of branches that are part of a tree's main structure Elimination of branches, stems, twigs that don't meet preestablished criteria regarding form Consideration of a tree's natural form
• Shorten branches.	Solutions to various problems
5. Thin the crown of plants.	
• Determine the branches, stems and shoots to remove.	Observance of the general form of plants Elimination of old stems
6. Cut back certain plants.	
• Explain why certain plants need to be cut back.	Evaluation of circumstances and types of plants concerned Explanation of the advantages and disadvantages of cutting back plants

Pruning	Code: 705163

7. Prune plants to rejuvenate them.	
• Prune branches and stems.	Selection of branches and stems to prune Application of progressive rejuvenation principle Elimination of oldest branches
• Drastically cut back the plant's stems.	Determination of plants suitable for this type of pruning Cutting back of all stems Coppicing
8. Prune hedges.	
• Apply methods and techniques specific to hedge pruning.	Inspection of hedges to prune and determination of desired effect Consideration of constraints: pruning frequency (based on species); health and safety; desired form, etc. Application of alignment methods and techniques, to preserve the uniform appearance of the hedge
9. Dispose of pruning debris.	
• Sort debris according to type.	Protection of the environment Distinction between different types of debris: contaminated, uncontaminated, infected, not infected
• Recover or dispose of debris.	Selection of recovery or disposal techniques Use of a wood chipper Techniques for use: mulch (e.g. to cover flower beds, as winter protection), wood chips for composting, etc.

Soil Amendment and Fertilization	Code: 705176

Competency 5 Duration 90 hours Credits 6

Behavioural Objective

Statement of the Competency

Amend and fertilize soils.

Achievement Context

- In an ornamental garden with a pond, a garden centre, greenhouse, nursery; for field or container growing, including different species of ornamental plants and vegetable and fruit plants
- Based on soil test results, and fertilization schedules to calculate needs
- Using soil acidity and alkalinity (pH) tables; a calculator; plants (to identify nutrient deficiency and toxicity); amendments and fertilizers; the necessary tools and equipment; Thien's flow diagram for determining soil texture by feel; and reference documents

Elements of the Competency	Performance Criteria
1. Take samples and fill out a soil test form.	• Observance of sample collection technique • Complete, relevant information included on the soil test form
2. Read the soil test results and apply the recommendations.	• Correct application of recommendations prescribed by the soil test
3. Choose amendments.	• Accurate identification of soil type, using sight and feel • Accurate determination of the main textural and structural characteristics of the soil to amend and fertilize • Accurate distinction between the main amendments • Appropriate choice of amendments to incorporate, based on soil type, the plants' needs and environmental conditions
4. Incorporate amendments.	• Choice of appropriate incorporation method for the type of soil and surface to cover • Appropriate quantity of amendments to incorporate • Uniform, homogeneous incorporation of amendments, to an appropriate depth

5. Choose fertilizers.	• Accurate explanation of the function of macronutrients and micronutrients in a plant • Accurate identification of the symptoms of nutrient deficiency or toxicity, and formulation of a plausible hypothesis about the nutrient involved • Appropriate choice of fertilizers to apply, based on soil type, the plants' needs and environmental conditions
6. Apply and incorporate fertilizers.	• Choice of an appropriate application and incorporation method • Appropriate quantity and preparation of fertilizer to apply or incorporate • Proper calibration of equipment • Uniform application and homogeneous incorporation of fertilizers
	For the competency as a whole: • Compliance with occupational health and safety rules • Proper use of tools and equipment • Cleanliness and concern for the quality of the work • Respect for the living materials used • Respect for the environment • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Take samples and fill out a soil test form.

• Apply a random soil sampling technique.	Use of equipment: probe and containers Sampling pattern, in accordance with the site Sample collection
• Determine the level of acidity and salinity of a sample.	Use of a pH meter, salinometer and colorimetric test paper Interpretation of results
• Gather the information required to fill out a soil test form.	Transfer of information onto the form: field size; history of crops grown; crops to be grown, etc.

2. Read the soil test results and apply the recommendations.

• Interpret the recommendations.	Mineral content, organic matter content, pH, texture Connections between soil test results and recommendations

• Implement a recommendation, based on soil test results.	Use of fertilization schedules Connections between the test results and the plants' specific needs Determination of nutrients to add to the soil
3. Choose amendments.	
• Describe the components of a mineral soil.	Identification and function of organic components, minerals, liquids and gases Identification of sand, silt, clay and organic matter, by sight and feel Physical, chemical and biological properties
• Use a soil texture triangle and Thien's flow diagram.	Explanation of the soil texture triangle and Thien's flow diagram Separation of soil components based on density, using a sedimentation test Determination of soil texture, using the soil texture triangle and Thien's flow diagram
• Determine the soil's ability to absorb water.	Definition of gravitational water, usable and unusable water and wilting point Soil percolation test Ability to absorb water Explanation of how texture affects the balance between air and water in soil
• Evaluate the possibilities for improving soil structure and texture.	Explanation of the advantages of good soil structure (crumbly)
• Identify the main amendments and growing substrates, in order to select them.	Identification and description of all the physical, chemical and biological properties of amendments and growing substrates: lime, compost, acidifiers, peat moss, manure, green manure, perlite, sand, vermiculite, rock wool, etc. Conditions for use and advantages
• Choose amendments.	Connections between soil type and the plants' specific needs: pH, level of organic matter, texture Choice of amendment(s) required
4. Incorporate amendments.	
• Use the different tools and equipment required to apply and incorporate amendments.	Rototiller, garden hoe, spreader, mixer, wheelbarrow, shovel, etc. Importance of incorporating amendments uniformly, homogeneously and to an appropriate depth, depending on the case
• Choose the application or incorporation method.	Based on the type of crop grown and the area to cover

• Calculate the quantities of amendment needed.	Measurement of surface area Calculation of volume needed based on established needs (rule of three and conversion tables) Research using bulk supplier and garden centre catalogues and standard quantities sold
5. Choose fertilizers.	
• Refer to principles of plant nutrition when selecting fertilizers.	Air and soil components required by plants Function of water Function of minerals in plant growth and recognition of abbreviations
• Detect symptoms of macroelement deficiency and toxicity.	Definition of the role of pH in deficiencies Availability of minerals in the soil Determination of symptoms of element deficiency and toxicity (e.g. calcium, magnesium, iron)
• Describe different categories of fertilizers.	Significance of the three numbers in a fertilizer formula Identification and use of simple, compound, organic, mineral, liquid, granulated, pelleted and gaseous fertilizers Research of products available on the market
• Choose a fertilizer.	Determination of the specific needs of the plants to fertilize Use of fertilizer formulas (corresponding to plant needs) Consideration of all the important parameters when choosing a fertilizer
6. Apply and incorporate fertilizers.	
• Use different fertilizer application methods.	Types of equipment and techniques for using and applying fertilizers Different contexts
• Choose a fertilizer application or incorporation method.	Association of equipment with types of fertilizer and application methods, based on the type of crop, the urgency of the need for minerals, etc. Choice of sprayer or spreader based on the fertilizer chosen Calibration of equipment
• Calculate the quantity of fertilizer needed.	Application of calculation methods: surface area to cover and number of plants to fertilize; quantity of fertilizer, water, spray mixture (total and per container); number of containers to fill, ppm, etc., depending on the case
• Prepare the product.	Preparation to ensure a homogeneous mixture, the proper dose and proper quantity (depending on the case)

Planting and Transplanting	Code: 705183

Competency 6 Duration 45 hours Credits 3

Behavioural Objective

Statement of the Competency	**Achievement Context**
Plant and transplant plants.	• Based on a plan or instructions provided by the customer or person in charge • In flower beds for planting or a site to be landscaped • Using root-balled, container-grown and bare-root woody or herbaceous plants • Using the necessary tools and equipment; appropriate personal protective equipment; and raw materials such as amendments, fertilizers and stakes

Elements of the Competency	**Performance Criteria**
1. Prepare the tools and equipment.	• Choice of appropriate tools and equipment • Thorough verification of the condition of the tools and equipment
2. Prepare the planting site.	• Careful weeding of the site • Appropriate choice of amendments and fertilizers • Appropriate quantity of amendments and fertilizers • Uniform, homogeneous incorporation of amendments and fertilizers, to an appropriate depth
3. Dig up the plants to be transplanted.	• Root system neatly cut • Appropriate size of root ball • Root ball intact • Appropriate preservation of plants • Timing likely to promote the plants' recovery
4. Prune the plants to clean them.	• Correct application of pruning technique • Compliance with established pruning standards • Proper disinfection of pruning tools
5. Dig the planting holes.	• Compliance with instructions regarding plant placement • Appropriate size of holes • Spacing between holes likely to promote the plants' future growth • Soil adequately loosened at the bottom of hole • Appropriate recovery of top soil

6. Place the plants in the ground.	• Observance of planting level • Aesthetic orientation of plants • Plants straight in relation to the horizon line • Appropriate amendment and fertilization of top soil • Homogeneous mixture • Adequate tamping of backfill • Clearing of collar
7. Stake the plants, as needed.	• Appropriate choice of stake • Solid, attractive installation of stake and ties • Appropriate positioning of stake • Appropriate height of stake ties • Careful preservation of aerial and underground parts of the plants
8. Perform finishing operations.	• Clean, attractive edging of the flower beds, in accordance with established rules • Appropriate size and tamping of watering trough • Uniform, sufficient application of mulch • Clean planting site • Thorough watering • Proper cleaning and storage of tools and equipment
	For the competency as a whole: • Compliance with landscaping standards • Compliance with municipal by-laws • Compliance with occupational health and safety rules • Proper use of tools and equipment • Observance of the sequence of operations • Concern for the quality of the work • Respect for the plants used • Respect for the environment • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Prepare the tools and equipment.

• Choose the tools and equipment, based on the type of work to the done.	Identification of tools and equipment Mode of operation used Selection criteria

• Make sure tools are in good working condition before using them.	Inspection of tools and equipment Basic maintenance
2. Prepare the planting site.	
• Determine the outline of the future flower bed.	Location, measurement, staking out Techniques for outlining the final shape
• Amend and fertilize the site.	Visual, tactile soil test Parameters to consider: soil type, types of plants, season Choice of amendments and fertilizers Calculation of quantities Application and incorporation techniques Loosening of the surface
3. Dig up the plants to be transplanted.	
• Remove a plant from the soil.	Determination of the size of the root ball Application of root cutting techniques Proportion of the root ball Application of transplanting principles and techniques
• Protect the root ball until planted.	Protection of the physical integrity of the root ball Placement in a container, heeling trench, basket or directly into the ground Consideration of planting standards
4. Prune the plants to clean them.	
• Eliminate branches or roots.	Disinfection of tools Elimination of dead, diseased, damaged or interfering branches Elimination of dead, diseased, damaged, interfering or spiralling roots
5. Dig the planting holes.	
• Dig planting holes.	Location of planting holes Determination of depth and width of holes, based on standards and the size of the root ball to plant Recovery of top soil, if possible
• Loosen the soil at the bottom of the holes.	Application of standards for loosening soil at the bottom of planting holes
6. Place the plants in the ground.	
• Prepare the backfill.	Amendment and fertilization of top soil Application of mixing techniques, based on the characteristics of a proper mixture

• Place the plants.	Determination of orientation Determination of level Verification that plants are straight
• Tamp the soil around the plants.	Tamping Clearing of collar
7. Stake the plants as needed	
• Choose a plant support system.	Determination of staking needs Distinction between different types of systems: simple stake, guy rope, trellis, underground anchor, depending on the case Application of selection criteria Selection of ties
• Install the plant support system.	Placement of system (dominant wind) Positioning (planting depth in the soil and height in relation to the tree), in accordance with standards Preservation of aerial and underground parts of the staked and nearby plants Determination of the height of the stake tie(s)
8. Perform finishing operations.	
• Apply techniques for finishing flower beds.	Creation of watering troughs Edge cutting and levelling Consideration of the aesthetic appearance of the finishing
• Store tools and equipment.	Cleaning Storage

Plant Health Problems	Code: 705196

Competency 7 Duration 90 hours Credits 6

Behavioural Objective

Statement of the Competency

Remedy plant health problems.

Achievement Context

- In situations requiring basic research, in a garden centre, a landscaped environment with flower beds and lawn areas, or a greenhouse
- While performing tasks as a plant-care worker or as a sales consultant in a garden centre
- Using ornamental or market-garden plants presenting problems such as weeds, pests, biotic and abiotic disease
- Using identification guides, reference documents or specialized software; the necessary materials: magnifying lens, binoculars, pruning shears, trowel, scouting or observation record sheets, etc.; cultural, natural or mechanical methods

Elements of the Competency	Performance Criteria
1. Detect common plant health problems.	• Effective detection of pests • Correct application of screening techniques specific to the types of plants inspected
2. Look for possible causes.	• Complete list of potential pests • Consideration of the characteristics of the anomalies detected
3. Diagnose plant health problems that may be caused by abiotic agents.	• Accurate determination of abiotic agents that caused growth anomalies • Correct association of symptoms with abiotic agents
4. Diagnose plant health problems that may be caused by biotic agents.	• Accurate determination of biotic agents that caused growth anomalies • Correct association of symptoms with biotic agents
5. Develop a corrective strategy.	• Choice of appropriate method of action for the biology of the agent, host plant and climate • Determination of the ideal time for action • Consideration of integrated pest management principles
6. Develop a preventive strategy.	• Accurate determination of methods of action to prevent the presence of major pests

For the competency as a whole:

- Correct application of problem-solving techniques
- Methodical use of appropriate technical documentation
- Precise, methodical work
- Proper use of equipment
- Compliance with instructions

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Detect common plant health problems.

• Consult the pest screening or pest monitoring program or log.	Type of crop Location, flower bed, section of the garden centre Potential or previous pests Previous treatments administered
• Prepare materials, based on the type of screening to be done.	Magnifying lens, shovel, pruning shears, notebook, sample bags or containers, identification guides, etc.
• Apply screening and sampling techniques.	Location and number of inspection sites Installation of traps References: phenological stage, calendar, degree–days, rain accumulation, relative air humidity and temperature Verification of traps (if applicable) and identification of untrapped pests on the plants General visual observation of the crop and the specific condition of target plants or organs Count of trapped pests or plants sampled Evaluation of the percentage of plants affected
• Take samples of and preserve specimens for identification purposes.	Healthy part of the infested plant (to identify the plant and compare it to the infested part) and part presenting signs, symptoms, anomalies or damage Mites, insects, weeds, etc., at different growth or developmental stages
• Note observations in a log or on a screening record sheet.	Name of the screener Type of crop and section Type and quantity of pest or percentage of signs or symptoms per plant inspected or percentage of plants presenting symptoms or damage Description of symptoms, signs, damage, anomaly, etc.

2. Look for possible causes.

• Select and consult relevant references, based on the problems detected.	Selection criteria: hosts, symptoms, suspected pests Consultation of specialized manuals, plant protection Web sites, scientific collections, publications of various associations
• Draw up a list of potential pests.	Based on the host plant and the characteristics of the anomalies detected

3. Diagnose plant health problems that may be caused by abiotic agents.

• Analyze symptoms.	Inspection of entire plants at different developmental stages: seedling, plantlet, vegetative state, flowering and fruiting periods Inspection of organs: leaves, roots, stems, flowers and fruits
• Associate abiotic agents with symptoms.	Factors: climatic, edaphic (nutrient deficiency or toxicity), mechanical, toxic, etc. Symptoms: burns, leaf roll, loss of organs, etc.

4. Diagnose plant health problems that may be caused by biotic agents.

• Associate damage and host plants with pests.	Identification of common mites, insects, molluscs, mammals at different growth stages, if applicable Characteristics of pests: conditions for development, types of metamorphoses and life cycle, feeding mechanisms (mouth piece) Severity of problems
• Associate symptoms and host plants with the main pathogenic microorganisms.	Identification of the main bacterial, fungal or viral diseases Characteristics of microorganisms: conditions for development, biology, type of parasitism, dissemination mode Severity of problems
• Identify possible effects caused by the presence of weeds.	Identification of common weeds at different growth stages, particularly at the plantlet stage Characteristics: lifespan, class, propagation, undesirable effects, types of soils that promote weed development

5. Develop a corrective strategy.

• Analyze ecological corrective strategies in order to select one.	Distinction between different approaches For each approach, description of: the type of actions, methods of action, best conditions

• Apply a methodology for selecting corrective strategies.	Evaluation of the severity of the problem Analysis of parameters, in accordance with the methods of action chosen Selection of appropriate methods and strategic planning (from an integrated pest management perspective) Solution of problems caused by the most common and easily identifiable biotic and abiotic agents
6. Develop a preventive strategy.	
• Analyze ecological preventive strategies in order to select one.	Distinction between different approaches For each approach, description of: the type of actions, methods of action, best conditions
• Apply a methodology for selecting preventive strategies.	Ideal conditions for plant growth and development Determination of preventive treatments Planning of a screening and preventive maintenance program (from an integrated pest management perspective) Prevention of problems caused by the most common biotic and abiotic agents

Plant Production	Code: 705206

Competency 8 Duration 90 hours Credits 6

Behavioural Objective

Statement of the Competency	Achievement Context
Produce plants.	• Based on instructions provided by the person in charge of production • In a greenhouse, nursery or open field • Using herbaceous, woody, ornamental or market-garden plants; seeds, cuttings, plantlets • Using different growing media, containers, fertilizers, etc; necessary documentation; necessary hand and mechanical tools and equipment; and appropriate personal protective equipment

Elements of the Competency	Performance Criteria
1. Plan and prepare the work to be done.	• Accurate interpretation of the production program • Determination of an appropriate propagation method for the plant species selected • Choice of appropriate container • Choice of appropriate substrates for needs • Homogeneous, sterilized growing media • Appropriate level of humidity
2. Produce seedlings.	• Observance of different seedling techniques, based on the type of plant • Accurate calculation of quantity of seed required • Choice of treatment to promote germination • Accurate determination of factors affecting seed viability • Thorough verification of germinability • Transplanting done according to standards and at the right time
3. Take cuttings.	• Accurate identification of the plants to propagate • Appropriate choice of parent plants, based on juvenility, absence of disease or insects, and physiological state • Observance of stem-cutting, leaf-cutting and root-cutting techniques • Appropriate choice of hormones or rooting product • Correct application of hormones or rooting product • Accurate determination of callus formation

Plant Production	Code: 705206
4. Divide plants.	• Observance of techniques for dividing plants, based on the type of plant
5. Graft plants.	• Correct application of one of the most common grafting techniques
6. Layer plants.	• Observance of mound- or tip-layering and air-layering techniques
7. Label plants.	• Accurate, complete identification of plants, based on their genus, species and cultivar • Observance of current labelling method
8. Monitor the growth of plants.	• Uniform, sufficiently moist growing medium • Correct application of fertilizers • Correct application of growth regulators • Appropriate pruning, pinching back and bud pruning, based on needs and the desired result • Appropriate plant health control measures • Correct setting of lighting equipment • Correct temperature setting • Effective control of ventilation and humidity level
9. Harvest and preserve plants in order to sell them.	• Correct application of techniques for digging up and preserving plants • Observance of maturation stage
10. Clean up the work area.	• Clean work area • Storage of tools and equipment in the appropriate place
	For the competency as a whole: • Compliance with occupational health and safety rules • Compliance with instructions • Proper use of tools and equipment • Efficient work method • Observance of the characteristics of different species • Cleanliness and concern for the quality of the work • Respect for the living materials used • Economical use of space • Economical use of materials • Respect for the environment • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Plan and prepare the work to be done.

• Gather information on the specific characteristics of the plants to produce.	Analysis of the production program Analysis of the characteristics and requirements of the different species to produce Determination of the propagation method, based on the plant to be produced and the desired result
• Prepare the growing medium.	Measurement of surface areas to cultivate Choice of containers: type of pots, flats and quantity Selection and calculation of the quantities of substrates required Preparation of mixtures: moisture and homogeneity of the substrate

2. Produce seedlings.

• Prepare seeds.	Search for information on seeds Determination of the number of seeds required Choice of treatment to promote germination Factors affecting seed viability Germinability
• Sow seeds.	Treatment to prevent damping off and other potential problems Application of various seedling principles and techniques: manual and mechanical Follow up
• Transplant seedlings.	Determination of time to transplant seedlings Manual or mechanical transplanting

3. Take cuttings.

• Select parent plants.	Determination of selection criteria Careful inspection of potential parent plants
• Apply cutting techniques, based on the species' characteristics.	Techniques for using knives and pruning shears Cutting techniques, based on the species Taking of cuttings Use of rooting hormone and fungicides Follow-up

4. Divide plants.

• Identify plants that can be divided.	Inspection of morphological characteristics: plants with modified stems, perennials with different root systems and growth patterns; woody shrubs; habit

• Apply techniques for dividing plants.	Determination of the best time to divide plants Consideration of the plant's proportions Cut: technique and tools
5. Graft plants.	
• Select the grafting technique, based on the plants' characteristics.	Selection of technique: budding, cleft-grafting, veneer grafting, etc. Determination of the best time and circumstances Possibilities: rootstock and scion, depending on the plant genus and species
• Apply grafting techniques.	Choice of stock and scion Positioning of the scion on the rootstock (correct union) Wrapping Use of protective products (grafting compound), if applicable
6. Layer plants.	
• Apply various layering techniques.	Selection of the plant species to layer Selection of techniques, based on the plants' characteristics Preparation of required materials
7. Label plants.	
• Recognize the importance of identifying plants during propagation and production.	Consequences of faulty identification Uses of identification Clarity of information (legibility, uniformity, etc.)
• Record relevant information on a label.	Inclusion of information required to identify a plant: genus, species, cultivar, date, colour, etc. Consideration of rules specific to the company
8. Monitor the growth of cultivated plants.	
• Perform follow-up operations.	Watering Fertilization and application of growth regulators Pruning, pinching back, bud pruning Plant health control
• Fill out a monitoring chart.	Type of information and importance Compilation of observations and actions
9. Harvest and preserve the plants in order to sell them.	
• Lift or harvest plants.	Selection of lifting or harvesting techniques, in accordance with the product Manual and mechanical lifting and harvesting

• Preserve plants.	Application of preservation principles and techniques: sorting, heeling trench, cellar, warehouse, cleaning, refrigeration, potting, wrapping
10. Clean up the work area.	
• Recognize the importance of work habits that foster order, cleanliness and the economical use of materials.	Plant protection and prevention of pests Effectiveness Identification of reusable materials
• Maintain the work area.	Cleaning of work area, tools and equipment Storage of tools and equipment Recovery of fill, perlite, vermiculite, containers

Edible Plants	Code: 705213

Competency 9 Duration 45 hours Credits 3

Behavioural Objective

Statement of the Competency	Achievement Context
Maintain edible plants.	• Based on instructions provided by the customer or person in charge • In a residential vegetable garden, in an ornamental flower bed containing edible plants, an open field, greenhouse or garden centre • Using vegetable plants, herbs or edible flowers • Using the necessary maintenance materials, such as fertilizers; the necessary tools and equipment; appropriate personal protective equipment; and reference documents and specialized software

Elements of the Competency	Performance Criteria
1. Identify the edible plants to maintain.	• Accurate identification of plants • Identification of plants, based on their morphology, edible organs and dimensions
2. Plan the maintenance of edible plants.	• Accurate assessment of the site's environmental conditions and their effect on the plants' condition • Accurate determination of the specific maintenance needs of edible plants • Consideration of the harvest period and growing requirements • Appropriate choice of maintenance care
3. Prepare the soil or growing medium.	• Appropriate choice of amendments • Proper preparation of soil or growing medium
4. Do common maintenance pruning of edible plants.	• Proper pruning of axillary buds, root suckers and sprouts • Strategic, timely pinching back
5. Stake edible plants.	• Installation of appropriate supports, stakes or trellises to promote productivity and optimal development
6. Water and fertilize edible plants.	• Uniform, sufficient watering • Appropriate choice of fertilizers • Observance of fertilizer dose • Observance of leaf and soil fertilization techniques

7. Protect plants against pests and diseases.	• Careful weeding of area • Regular inspection of plants for pests or diseases • Appropriate control of edible plant pests and observance of integrated pest management principles
	For the competency as a whole:
	• Compliance with occupational health and safety rules • Compliance with current standards • Compliance with instructions • Observance of the characteristics and requirements of different species • Respect for the environment regarding the use of fertilizers • Proper use of tools and equipment • Clean, careful work • Respect for the living materials used • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Identify the edible plants to maintain.

• Distinguish the botanical differences characterizing edible species.	Distinction between types of vegetables (root, stem, inflorescence and leaf vegetables); families; growth; types of fruit, roots; annual, biannuals, perennials, herbaceous and woody plants
• Identify the edible plants that are grown in Québec and are available in garden centres.	Fruit trees and shrubs, vegetables, herbs and edible fruit Grown indoors and outdoors

2. Plan the maintenance of edible plants.

• Select the best sites in which to establish edible plants.	Analysis of the characteristics of different sites Importance and pollination periods of fruit tree cultivars Determination of requirements for establishing various edible plants

• Determine the general and specific needs of the plants to be maintained.	Parameters and maintenance techniques Method of examining established plants and assessing their needs Method of identifying relevant information: plant needs, developmental stages, maintenance care, environmental conditions Ecological approach to be used List of maintenance care to apply, based on the needs identified
3. Prepare the soil or growing medium.	
• Amend the soil or growing medium.	Gathering of information on the specific amendment needs of edible plants Choice of amendments (ecological approach) Calculation of quantities Application or incorporation
4. Do common maintenance pruning of edible plants.	
• Select maintenance pruning techniques.	Physiological importance and purpose of pruning edible plants Description of pruning techniques specific to apple trees, raspberry and blueberry bushes
• Apply the techniques selected.	Disinfection of tools Safe behaviour
5. Stake edible plants.	
• Assess the staking needs of plants.	Stakes and developmental stages of plants Stakes and productivity Criteria for assessing staking needs
• Use the stakes selected.	Techniques and circumstances for use Stake and trellis
6. Water and fertilize edible plants.	
• Select irrigation techniques, based on the plants' needs.	Irrigation systems: methods, advantages, disadvantages Environmental conditions, growing conditions and water requirements of plants Uniform, regular watering
• Prepare and use fertilizers.	Plants' needs and corresponding choice of fertilizer (ecological approach) Application periods Calculation of dose Mixture Fertilizer application techniques

7. Protect plants against pests and diseases.

• Plan health control measures.	Methodology: what, when, how Interpretation of signs Diagnosis and determination of solutions Compilation of data in the pest monitoring log
• Detect the major pests affecting edible plants.	Detection and identification of pests Circumstances and factors promoting the presence or development of pests
• Apply preventive and corrective measures.	Determination of cultivation measures Mechanical and biological measures Application methods

Summer Maintenance	Code: 705224

Competency 10 Duration 60 hours Credits 4

Behavioural Objective

Statement of the Competency	**Achievement Context**
Perform summer maintenance tasks in a garden.	• In an ornamental garden with a pond or in a garden centre • Based on instructions provided by the customer or the person in charge • Using aquatic or terrestrial, woody and herbaceous plants; fertilizers and ecological pest control products; the necessary tools and equipment; personal protective equipment; reference documents or specialized software

Elements of the Competency	**Performance Criteria**
1. Identify the plants in the garden.	• Accurate identification of the main features, morphological characteristics and size of summer-interest plants • Accurate identification of summer-interest plants
2. Plan the maintenance work to be done.	• Accurate determination of the specific needs of the plants to maintain • Thorough planning of the work • Proper preparation of the materials required
3. Water the plants in the garden and apply summer fertilizers.	• Accurate identification of signs that a plant needs water • Uniform, sufficient watering • Maintenance of the water level in the pond • Choice of an appropriate fertilizer for the plants' specific needs • Observance of dose • Observance of leaf and soil fertilization techniques
4. Do summer maintenance pruning.	• Appropriate pinching back of plants in order to promote branching • Regular elimination of dead leaves and spent flowers • Systematic removal of dead, diseased or poorly formed branches • Cutting of axillary buds, sprouts and root suckers, as the need arises • Methodical shortening of stems that grow too quickly

Summer Maintenance	Code: 705224
5. Control the presence of weeds.	• Constant weeding (plants and roots) • Pulling up of weeds before seeds mature • Proper disposal of pulled weeds • Careful hoeing of the entire surface of unmulched flower beds • Hoeing depth conforms with current standards • Thickness of mulch layer conforms with current standards
6. Maintain pond hygiene.	• Careful removal of algae and dead leaves • Thorough cleaning of filters and pump
7. Control the presence of animal pests and pathogenic microorganisms.	• Methodical, regular inspection • Accurate identification of the main signs of the presence of animal pests or pathogenic microorganisms • Application of a logical problem-solving method • Accurate determination of the nature of the problem • Appropriate action, based on the problem identified • Proper use of integrated pest management methods
8. Provide information about the maintenance program.	• Regular information provided • Precise, accurate information
	For the competency as a whole: • Compliance with occupational health and safety rules • Compliance with current standards • Observance of the characteristics and requirements of different species • Compliance with instructions • Proper choice and use of tools and equipment • Clean, careful work • Thorough verification of the quality of the work • Respect for the living materials used • Respect for the environment regarding the use of fertilizers • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Identify the plants in the garden.

• Describe summer-interest plants.	Specific seasonal interest Morphology of organs and habit or general form Size and growth rate Environmental needs
• Identify summer-interest plants.	Genus and species in Latin and English Annuals; tender bulbs; trees and shrubs; evergreens; perennials; climbing, aquatic and indigenous plants sold in Québec (about 140) Search for information on rarer plants using identification keys or manuals

2. Plan the maintenance work to be done.

• Establish the plants' maintenance needs using the maintenance program.	Analysis of the maintenance program and consideration of the previous work done, if applicable Observation of the plants in the garden, list and identification of the plants' maintenance needs Analysis of the environmental requirements of each plant species
• Determine the type of work to do and the sequence of operations.	Watering routine Fertilization Maintenance pruning Methodical weeding and pest detection Maintenance of pond hygiene Corrective pest control treatment, according to integrated pest management principles Gathering of data pertaining to the maintenance program Follow-up
• Determine and prepare the necessary materials.	Tools and equipment Fertilizer Pest control products Maintenance program

3. Water the plants in the garden and apply summer fertilizers.

• Identify signs that plants need water.	Wilting of leaves and stems Change in leaf colour General appearance of the plant Soil/fill Heat wave

• Water plants.	Equipment and method Quantity, uniformity
• Maintain the water level in a pond.	Systematic observation Filling
• Fertilize plants.	Choice of fertilizer Calculation of dose Fertilization techniques and equipment Summer fertilization
4. Do summer maintenance pruning.	
• Pinch back plants in order to promote branching.	Pinching principles and techniques Identification of plants that require pinching Pinching back
• Eliminate dead leaves and spent flowers.	Consequences of not removing dead leaves and spent flowers Justification for not removing spent flowers on certain plants Removal of dead leaves and spent flowers on certain plants
• Remove dead, diseased or poorly formed branches, axillary buds, sprouts and root suckers.	Identification of dead, diseased or poorly formed branches; axillary buds, sprouts and root suckers Disinfection of pruning shears Routine removal Compliance with cutting standards
• Shorten stems that grow too quickly.	Identification of stems that grow too quickly Disinfection of pruning shears Stems shortened in accordance with desired result Cut conforms with current standards and the plant's form
5. Control the presence of weeds.	
• Weed and hoe.	Importance of pulling out weeds and their roots before seeds mature Best conditions for weeding and hoeing Respect for nearby plants Mechanical and manual weeding and hoeing
• Dispose of pulled weeds.	Importance of disposing of pulled weeds Composting or destruction of weeds (circumstances and methods)
• Maintain the thickness of mulch layer.	Operations aimed at evening out the surface and standards regarding thickness Technique for clearing collars

6. Maintain pond hygiene.

• Remove algae and dead leaves.	Importance of maintaining pond hygiene Methods of removing algae and dead leaves
• Clean the filters and pump.	Technique for cleaning filters and pumps

7. Control the presence of animal pests and pathogenic microorganisms.

• Inspect plants.	Regular, methodical inspection Identification of the main signs of growth anomalies and the presence of animal pests or pathogenic microorganisms
• Solve plant health problems.	Application of a problem-solving method Formulation of a diagnosis Determination of solutions, based on integrated pest management principles
• Apply appropriate solutions.	Equipment, products and techniques Period and time for action Effective intervention techniques
• Follow up.	Regular inspection Data compilation Decision

8. Provide information about the maintenance program.

• Gather information about the maintenance program and its application.	Recording of all relevant information: name; date of entry; flower bed number, identification of the section or name of the plants/trees maintained; scouting observation; recommended treatments; routine maintenance: weeding, pruning, watering, fertilization, etc.; weekly follow-up

Fall Maintenance	Code: 705235

Competency 11 Duration 75 hours Credits 5

Behavioural Objective

Statement of the Competency	**Achievement Context**
Perform fall maintenance tasks in a garden.	• In an ornamental garden with a pond or in a garden centre • Based on instructions provided by the customer or the person in charge • Using aquatic or terrestrial, woody and herbaceous plants; materials required for fall maintenance: rose cones, burlap, snow fences, etc.; the necessary tools and equipment; personal protective equipment; reference documents or specialized software
Elements of the Competency	**Performance Criteria**
1. Identify the plants in the garden.	• Accurate identification of the main features, morphological characteristics and size of fall-interest plants • Accurate identification of fall-interest plants
2. Plan the maintenance work to be done.	• Accurate determination of the specific needs of the plants to maintain • Thorough planning of the work • Proper preparation of the materials required
3. Apply fall fertilizers.	• Choice of an appropriate fertilizer for the plants' specific needs • Observance of dose • Observance of leaf and soil fertilization techniques
4. Divide spring- and summer-flowering perennials.	• Acceptable dimensions of divisions • Balanced roots and foliage in divisions • Roots neatly cut • Absence of shredding • Respect for existing plants
5. Do the end-of-season cleanup.	• Thorough cutting back of certain herbaceous and woody plants • Systematic pulling and composting of annuals that cannot be recovered • Raking and appropriate recovery of fallen leaves

Fall Maintenance	Code: 705235
6. Preserve non-hardy plant species.	• Proper overwintering of tender bulbs • Appropriate recovery of certain annual species • Proper overwintering of non-hardy aquatic plants
7. Plant hardy bulbs.	• Appropriate preparation of planting bed • Proper spacing between bulbs • Appropriate planting depth • Proper tamping of backfill around bulbs • Appropriate layout of bulbs, according to the desired effect • Deep, thorough watering
8. Protect the garden plants and pond for winter.	• Accurate assessment of the factors likely to damage garden plants during winter • Appropriate choice of protection materials • Proper, effective installation of protection materials • Solid, attractive protection • Appropriate transfer of hardy containerized plants to the deepest part of the pond • Methodical placement of protective net over the pond surface
9. Clean and store tools and equipment.	• Pond pump properly disconnected • Proper cleaning of tools and equipment • Proper storage of tools and equipment
	For the competency as a whole: • Compliance with occupational health and safety rules • Compliance with current standards • Compliance with instructions • Observance of the characteristics and requirements of different species • Respect for the environment regarding the use of fertilizers • Proper use of tools and equipment • Clean, careful work • Thorough verification of the quality of the work • Respect for the living materials used • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Identify the plants in the garden.

• Describe fall-interest plants.	Specific seasonal interest Morphology of organs and habit or general form Size and growth rate Environmental needs
• Identify fall-interest plants.	Genus and species in Latin and English Perennials, grasses, ferns, climbing plants, trees, shrubs, evergreens and indigenous plants Plants sold in Québec (about 100) Search for information on rarer plants using identification keys or manuals

2. Plan the maintenance work to be done.

• Establish the plants' maintenance needs using the maintenance program.	Analysis of the maintenance program and consideration of the previous work done, if applicable Observation of the plants in the garden, list and identification of the plants' maintenance needs Analysis of the environmental requirements of each plant species
• Determine the type of work to do and the sequence and frequency of the operations.	Fall fertilization Division of perennials End-of-season cleanup Preservation of non-hardy plant species Planting of bulbs Winter protection Cleaning and storage tools and equipment
• Determine and prepare the necessary materials.	Tools and equipment Fall fertilizers Pest control products Bulbs Winter protection materials

3. Apply fall fertilizers.

• Fertilize plants.	Choice of fertilizer Calculation of dose Fertilization techniques and equipment Fall fertilization Equipment Application and incorporation

4. Divide spring- and summer-flowering perennials.	
• Apply the principles and techniques of perennial division.	Species that can be divided Morphological criteria indicating possible division Tools Best time for division, according to species Division method
5. Do the end-of-season cleanup.	
• Cut back certain plants.	Identification of herbaceous and woody plants that need to be cut back Techniques for cutting back plants
• Pull out annuals.	Methodical, efficient procedure Composting of plants
• Rake fallen leaves.	Recovery techniques Cleanliness
• Do end-of-season watering.	Importance of end-of-season watering Identification of plants to water
• Clean the pond.	Importance of cleaning Identification of the different items to clean
6. Preserve non-hardy plant species.	
• Prepare plants for winter.	Overwintering principles and techniques: temperature, humidity, materials, light, pest control products, methodology, etc. Overwintering of tender bulbs Overwintering of non-hardy aquatic plants Recovery of certain annual and exotic plant species
7. Plant hardy bulbs.	
• Prepare the planting bed.	Location Weeding and hoeing Amendment and fertilization
• Lay out the bulbs.	Choice of species (using documentation) Species characteristics and requirements: type of soil, exposure to sunlight, spacing, planting depth, height, colour, etc. Desired effect
• Use techniques for planting bulbs.	Planting in conformity with standards: spacing, depth, tamping, fertilization Watering Identification of plantings

8. Protect the garden plants and pond for winter.	
• Assess the factors likely to damage garden plants in winter.	Climatic factors Biological factors Mechanical and chemical factors Presence of pests
• Choose the protection materials.	Description of the main types of winter protection materials Connections between the factors likely to damage plants and protection materials
• Install winter protection materials.	Installation method and techniques Respect for plants during operations Best time to install different types of protection materials
9. Clean and store tools and equipment.	
• Store the pond pump.	Verification, disconnection and cleaning Safety Method
• Clean tools and equipment.	Importance of cleaning in order to keep tools and equipment in good working order Verification that tools are in good working order Lubrication, bleeding of fluids, sharpening, etc. Sorting of tools and equipment by category and setting aside those in need of repair
• Store tools.	Safe, appropriate storage areas Logical sorting

Outdoor Pesticide Use	Code: 704592

Competency 12 Duration 30 hours Credits 2

Behavioural Objective

Statement of the Competency	Achievement Context
Use pesticides outdoors.	• In a nursery, open field garden centre and during outdoor landscape maintenance work • On ornamental plants affected by pests • Using a variety of pesticides • Based on information about the environmental conditions of the site to be treated • Referring to information on pesticide labels, toxicological data sheets, and reference documents on how to use, calibrate and maintain applicators • Using personal protective equipment

Elements of the Competency	Performance Criteria
1. Develop a one-time action plan to control plant pests.	• Accurate assessment of the extent of the damage identified • Accurate determination of the biotic or abiotic agent responsible for the damage • Relevant actions planned, based on the growth stage of the pest, the results of previous actions, the integrated pest management program, environmental conditions
2. Choose a pesticide.	• Observance of selection criteria (e.g. the growth stage of the cultivated plants, environmental conditions, the classification of pesticides, characteristics of pesticides, the factors influencing pesticide efficacy) • Appropriate choice of adjuvant
3. Prepare the materials and equipment required for the pesticide application.	• Appropriate choice of application materials • Appropriate choice of protective equipment for the pesticide preparation and application • Verification of the condition of the equipment • Calibration of the equipment according to current recommendations

4. Prepare the product.	• Organization of an appropriate area in which to prepare and handle the product • Accurate interpretation of the information on the pesticide label and toxicological data sheet • Accurate calculation of the quantity of pesticide to prepare, based on the surface area to cover • Accurate calculation of the concentration of the mixture, based on instructions for the product • Accurate calculation of the product's application rate • Homogeneous mixture • Proper disposal of empty containers
5. Apply the pesticide.	• Consideration of environmental conditions • Consideration of precautions to take to minimize pesticide exposure • Determination of appropriate measures to protect the environment • Continuous verification of the operating condition and flow of the equipment used • Control of pesticide drift • Safe disposal of leftover product and wash water • Maintenance, decontamination and storage of protective equipment and application materials
6. Store the pesticide.	• Determination of the safety measures to adopt, based on the type of product and the type of pesticide used • Relevant corrective action to take with regard to the facilities and the emergency plan
7. Assess the action taken.	• Accurate assessment of the treatment's efficacy • Determination of factors confirming the treatment's success or failure
8. Record technical information in the pesticide usage log.	• Recording of all information, such as : plants treated; description of the problem; treatment applied; quantity of pesticide used; treatment result
9. Plan an integrated pest management strategy.	• Compliance with the different steps in the integrated pest management program • Relevant actions
10. Apply the provisions governing pesticide sales.	• Correct application of the general principles governing pesticide sales • Proper record keeping of pesticide sales • Inclusion of accurate information in the pesticide inventory • Relevant corrective action to take with regard to the company's facilities and emergency plan

For the competency as a whole:

- Compliance with occupational health and safety rules
- Compliance with the *Pesticide Management Code* and other laws and regulations governing environmental protection and pesticide use
- Adoption of practices recommended by the Ministère du Développement durable, de l'environnement et des Parcs
- Ongoing concern for the effects of pesticides on the environment
- Logical sequence of operations

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Develop a one-time action plan to control plant pests.

• Associate biotic or abiotic agents with the characteristics of the damage identified.	Interpretation of visual and morphological signs Identification of pests
• Measure the extent of the damage.	Sampling methods Assessment of the relevance of the action to take Consultation of action logs

2 Choose a pesticide.

• Identify the consequences of pesticide use for the environment and health.	Short-term and long-term effects of pesticides on plants and animals Effects on human health Reliable sources of information on safe pesticide use Extent and limitations of scientific knowledge
• Distinguish the various regulatory provisions governing pesticide use.	Roles and responsibilities of the various levels of government Current laws and regulations Certification standards
• Distinguish different pesticides based on their properties and the conditions for their effective use.	Physical and chemical characteristics, formulation and mode of action Compatibility between pesticides and adjuvants Climate and edaphic conditions Growth stages of the plants and the organism with respect to pesticide use

3. Prepare the materials and equipment required for the pesticide application.

• Select the pesticide application equipment and the protective equipment.	Distinction between different types of pesticide application equipment Conditions for use Effectiveness of personal protective equipment, based on the products used and exposure
• Check the equipment and make the necessary adjustments.	Application of procedures recommended in manufacturers' manuals Techniques for adjusting the flow rate and boom height of the application equipment

4. Prepare the product.

• Interpret the information intended for pesticide users.	Personal protective measures Precautions specific to products Obligations stipulated in the regulations Rules to follow concerning the layout of the work area Importance of planning purchases Protocols for the disposal of empty containers
• Interpret toxicological data sheets.	Interpretation of data sheets
• Calculate quantities and apply mixing protocols.	Calculation of doses and dilutions Mixing protocol: wettable powders, liquid concentrates, emulsions, pesticide packets

5. Apply the pesticide.

• Handle application equipment.	Recognition of the importance of using application equipment properly Handling technique specific to each type of equipment Applicable safety rules
• Observe environmental conditions that can impede the quality of the application.	Temperature, air convection, relative humidity, wind speed, land slope, soil texture, soil type and degree of wetness of the foliage Adaptation of the application to the environmental conditions
• Take precautions to minimize the risk of human and environmental exposure to pesticides.	Measures to control drift, runoff and leaching Precautions based on the source of exposure Procedure for disposing of leftover products and wash water Procedure for maintaining, decontaminating and storing equipment

6. Store the pesticides.

• Ensure compliance with standards and conditions governing pesticide storage.	Storage techniques Placement of different products Materials and containers used Health and safety precautions
• Recognize the importance of an emergency plan and identify its main elements.	Preventive measures Preparation measures Measures in the event of leakage, fire, accident, etc.

7. Assess the action taken.

• Check the results of the treatment.	Relative importance of criteria to assess efficacy Signs to check in order to assess treatment efficacy and determine factors responsible for treatment failure

8. Record technical information in the pesticide usage log.

• Recognize the importance of pesticide usage logs.	Headings in a pest control log
• Record information.	Recording of technical information such as crop/plant treated, description of the problem, treatment used, pesticide quantity used, treatment result

9. Plan an integrated pest management strategy.

• Describe integrated pest management.	Specific strategies and methods Compatibility between management tactics Usual planning steps

10. Apply the provisions governing pesticide sales.

• Recognize the importance of the salesperson's role.	Responsibility of the salesperson to the company and to customers Importance of correctly identifying customers' plant health problems in order to suggest alternatives to chemical pesticides, if applicable Importance of ensuring that customers have the necessary protective equipment and are aware of safety measures, in order to protect their health and the environment

• Comply with legislation governing the sale and display of pesticides.	Categories and classes of pesticides Permits and certificates Organization of pesticides in displays, based on the type of container (format and packaging material) Organization based on type of organism targeted by the pesticide Placement of protective equipment Protective measures for staff and customers when setting up a pesticide display Customer access to displays: safety and regulations
• Recognize the principles of pesticide management in stores.	Keeping of a pesticide sales register Inventory Safety provisions: emergency plan, prohibited products, and sales permits for retailers and wholesalers
For the competency as a whole:	
• Situate the competency within the program.	Reason for the competency Course outline Connection with other competencies
• Show concern for safety when using pesticides.	Main safety hazards or risks Preventive measures, review of the competency *Ensure health, safety and physical well-being on construction sites* Educational aim
• Show concern for working autonomously.	Educational aim Proactive attitude Ability to foresee the work to be done Curiosity, receptiveness to learning

Spring Maintenance	Code: 705245

Competency 13 Duration 75 hours Credits 5

Behavioural Objective

Statement of the Competency	Achievement Context
Perform spring maintenance tasks in a garden.	• In an ornamental garden with a pond or in a garden centre • Based on instructions provided by the customer or the person in charge • Using aquatic or terrestrial, woody and herbaceous plants; materials required for spring maintenance, such as fertilizers and pesticides; substrates, pots, planters and flower boxes; the necessary tools and equipment; personal protective equipment; reference documents, identification keys or guides, or specialized software

Elements of the Competency	Performance Criteria
1. Remove winter protection materials.	• Careful, methodical removal of winter protection materials • Appropriate recovery of reusable materials • Appropriate storage of reusable materials
2. Identify the plants in the garden.	• Accurate identification of the main features, morphological characteristics and size of spring-interest plants • Accurate identification of spring-interest plants
3. Plan the maintenance work to be done.	• Complete list of winter damage • Accurate determination of the specific needs of the plants to maintain • Proper preparation of the materials required • Thorough planning of the work
4. Do the spring cleanup.	• Systematic removal of dead plants and debris • Careful weeding of the flower beds • Thorough cleaning of the pond • Proper spring pruning
5. Prevent the development of pests.	• Accurate determination of the main potential pests • Determination of appropriate strategies to prevent the development of pests • Correct application of pest control product or prevention technique

6. Review the layout of the plants.	• Appropriate selection of plants to replace and transplant • Correct application of transplanting techniques • Appropriate division of fall-flowering plants • Thorough verification and adjustment of stakes and trellises, if applicable • Proper repositioning of container plants in the pond and systematic pump start-up
7. Prepare the soil in the flower beds.	• Careful spading • Accurate determination of the soil texture class • Appropriate choice of amendments required • Uniform, sufficient application of amendments • Attractive redefinition of the edges of flower beds • Proper repositioning of flower bed edging, if applicable
8. Plant annuals and tender bulbs.	• Compliance with technical and aesthetic standards regarding the planting of annuals and tender bulbs
9. Apply spring fertilizers.	• Choice of an appropriate fertilizer for the plants' specific needs • Observance of dose • Observance of leaf, soil and pond fertilization techniques
10. Install organic and inorganic ground cover.	• Appropriate choice of type of ground cover • Appropriate quantity of ground cover • Uniform installation of ground cover
	For the competency as a whole: • Compliance with occupational health and safety rules • Compliance with current standards • Compliance with instructions • Compliance with landscape plan • Observance of the characteristics and requirements of different species • Proper use of tools and equipment • Clean, careful work • Thorough verification of the quality of the work • Respect for the living materials used • Respect for the environment regarding the use of fertilizers and pesticides • Consideration of different ecological practices

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Remove winter protection materials.

• Determine the best time to remove different types of protection.	Consequences of removing winter protection too early or late in the season Ideal climate for removing materials, depending on the type of protection and plant species
• Remove protection materials.	Removal method Recovery Storage

2. Identify the plants in the garden.

• Describe spring-interest plants.	Specific seasonal interest Morphology of organs and habit or general form Size and growth rate Environmental needs
• Identify spring-interest plants.	Genus and species in Latin and English Hardy bulbs, trees and shrubs, evergreens, perennials, conifers and indigenous plants Plants sold in Québec (about 140) Search for information on rarer plants using identification keys or manuals

3. Plan the maintenance work to be done.

• Draw up a list of the damage caused by winter.	Identification of damage: salt burns (caused by de-icing salt), frost or chilling injury, wind desiccation, breakage caused by heavy snow, etc. Observation, inventory and identification of damage Consideration of environmental requirements: exposure to sunlight, hardiness zone, humidity, soil type, pH, etc.
• Determine the specific needs of the plants to maintain.	Pruning Replacement, relocation Division or transplanting Amendment, fertilization (consideration of the results of the soil test, if applicable) Staking Mulching, redefinition of flower beds Weeding and preventive pest control treatment Consideration of environmental requirements: exposure to sunlight, hardiness zone, humidity, soil type, pH, etc. Sequence and schedule of operations

• Prepare the necessary materials.	Tools and equipment Stakes, trellises Amendment and fertilizer Ground cover, geomembrane, etc. Pest control products Replacement plants
4. Do the spring cleanup.	
• Remove dead plants and debris.	Identification of dead or diseased branches and healthy branches Distinction between buds that are ready to bloom and aborted buds Elimination of selected plants
• Weed flower beds.	Distinction between ornamental and undesirable plants, including weed plantlets Weeding techniques
• Clean the pond.	Draining of water Cleaning and disinfection, if necessary Removal of debris
• Do the spring pruning.	Removal of dead, diseased, poorly formed and broken branches Consideration of pruning standards
5. Prevent the development of pests.	
• Determine the main potential pests.	Inventory of plants in the flower bed Search for information in reference documents in order to identify potential pests, based on the plants identified and the site of cultivation List of potential pests
• Determine strategies to prevent the development of pests.	Search for information on preventive measures Development of preventive strategies: pruning, companion planting, dormant oil application, etc. Use of pesticides, in conformity with the legislation
• Apply preventive strategies.	Integrated pest management principles and practices combining mechanical, physical, cultivation, organic and chemical tactics
6. Review the layout of the plants.	
• Transplant plants.	Selection of plants to replace or transplant Application of transplanting techniques
• Divide fall-flowering plants.	Principles and techniques of plant division Selection of plants to divide Perennial division

• Adjust stakes and trellises, if applicable.	Verification techniques Careful adjustment techniques
• Start up the pond.	Repositioning of containerized plants Adjustment of water level Verification and installation of the float, filtration system and overflow Pump start-up
7. Prepare the soil in the flower beds.	
• Amend the flower beds.	Spading Determination of the soil texture class Choice of amendments and calculation of quantities Application and incorporation of amendments
• Redefine the edges of the flower beds.	Selection of the tools required Work method based on the desired result Repositioning of edging, if applicable
8. Plant annuals and tender bulbs.	
• Carry out planting projects using annuals.	Design of planters, flower boxes, integration of annuals into existing flower beds or design of annual flower beds (city), mosaics, etc. Application of principles and techniques for planting annuals Consideration of aesthetic principles
• Incorporate tender bulbs into existing flower beds.	Principles and techniques for planting bulbs Attractive integration
9. Apply spring fertilizers.	
• Fertilize plants.	Choice of fertilizer Dose and quantity Fertilization techniques Use of equipment Fertilization of terrestrial and aquatic plants Specifics of spring fertilization
10. Install organic and inorganic ground cover.	
• Choose the type of ground cover.	Selection criteria: organic and inorganic, colour and properties, advantages and disadvantages Selection based on the desired effect and style
• Install the ground cover.	Measurements and calculation of quantity Installation: technique, thickness and uniformity

Plans and Specifications	Code: 705252

Competency 14 Duration 30 hours Credits 2

Behavioural Objective

Statement of the Competency

Interpret plans and specifications.

Achievement Context

- During landscape or green space maintenance operations, on a site to be landscaped, or in a garden centre when preparing orders for customers with landscape plans
- Based on landscape plans, including planting plans and corresponding specifications
- Using measuring instruments and a calculator, suppliers catalogues, and standards

Elements of the Competency	Performance Criteria
1. Interpret the codes and symbols in the plan.	• Accurate interpretation of codes • Accurate interpretation of symbols
2. Interpret the different views of the plan.	• Accurate interpretation of different views: plan view, elevation, cross-section, perspective, etc.
3. Transpose data from the plan.	• Accurate measurements taken from the plan • Accurate location and transposition of data from the plan to the site • Proper use of measuring instruments • Correct application of the rule of three and triangulation
4. Interpret the information in the specifications needed to carry out the work.	• Accurate interpretation of technical information related to the work • Accurate interpretation of the standards and regulations to observe when carrying out the work
5. Interpret the information needed to plan the work.	• Accurate determination of a logical sequence of operations • Consideration of data in the plan and specifications
	For the competency as a whole: • Compliance with current standards • Systematic work method • Attention to detail

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Interpret the codes and symbols in the plan.

• Identify the codes and symbols that represent different features in a landscape plan.	Interpretation of major plant symbols Interpretation of symbols and codes representing broad categories of inert materials and features Interpretation of building-related codes: doors, windows, faucets, electric meter, dryer vent, etc. Interpretation of site-related codes: property boundary lines, easements, right of way, etc. Interpretation of codes

2. Interpret the different views of the plan.

• Refer to and read the legend and title block.	Definition of legend and title block Identification of elements that may be contained in the legend of a landscape plan Identification of information that must appear in the title block of a landscape plan Interpretation of legends and title blocks
• Make connections between an abstract plan and concrete landscaping.	Comparison between completed landscaping projects and their respective plans From a plan to reality and from reality to the plan Visualization
• Read contour lines on a technical plan.	Reading Interpretation Visualization
• Distinguish different types of plans.	Distinction between different plans: landscape plan (bird's-eye view), sketch, preliminary plan, final plan, presentation drawing, certificate of location, topographic plan, perspective, elevation plan, cross-section plan, construction detail plan and technical plan
• Identify a landscape plan.	General description of the work to be done Identification of the scale and constraints List of plants to purchase and inert materials required for planting, as well as quantities required

3. Transpose information from the plan.

• Apply concepts of scale.	Interpretation of the most commonly used scales in landscape plans Connections between actual site measurements and scaled-down measurements on a plan Conversion of metric units into imperial units, and vice versa Use of rule of three
• Measure spaces or elements on a plan using an engineer's rule.	Use of measuring instruments: metric or imperial engineer's rule, protractor, compass, tape measure Measurement of flower beds, lawn surfaces, plants, driveways, patios, etc. Measurement of straight or curved lines, widths, surface areas, diameters, etc. Location of different elements (triangulation) Transposition of different measurements to the site

4. Interpret the information in the specifications needed to carry out the work.

• Recognize the purpose of specifications in a landscaping project.	Definition of specifications and the main technical terms used Usefulness of specifications and circumstances for including them in a project Familiarization with the laws, regulations and responsibilities of customers, landscapers, etc.
• Locate the different specification sections.	Definition of different specification sections and accompanying or appended documents Identification of the type of information contained in each section and appendix
• Identify the products required to carry out a landscaping project, using the specifications.	Types of products: plants, amendments, fertilizers, mulch, edging, stakes, watering equipment, etc. Product quality assurance and association with corresponding standards
• Determine the work to be done.	Analysis of the list of work to be done Analysis of the work methods stipulated in the specifications
• Identify the general project conditions.	Duration and work schedule Distribution of responsibilities Cleaning and safety Warranty Transport

Plans and Specifications	Code: 705252

5. Interpret the information needed to plan the work.

• Locate in the plan and specifications the information needed to plan the work.	General description of the work to be done Identification of possible constraints during execution Consideration of various conditions affecting execution Consideration of efficiency, the economical use of materials and time when renting tools, etc. for future work
• Determine the steps involved in carrying out a landscaping project, based on plans and specifications.	Determination of work required: building, creation of flower beds, planting, sodding Logical, chronological sequence of operations, from beginning to end

Pesticide Use in Protected Cultivation	Code: 705261

Competency 15 Duration 15 hours Credit 1

Behavioural Objective

Statement of the Competency	Achievement Context
Use pesticides in protected cultivation.	• In commercial greenhouses that produce ornamental or vegetable and fruit plants and in retail greenhouses • On plants affected by pests, and using pesticides, information about the environmental conditions of the site to be treated, and results of previous actions • Using all the necessary information on pesticides; toxicological data sheets; reference documents on how to use, calibrate and maintain applicators; the necessary tools and equipment; appropriate personal protective equipment

Elements of the Competency	Performance Criteria
1. Develop a one-time action plan to control plant pests.	• Accurate assessment of the extent of the damage • Accurate determination of the biotic or abiotic agent responsible for the damage • Relevant actions planned, based on the extent of the damage, the results of previous actions taken, the integrated pest management program, environmental conditions
2. Choose a pesticide.	• Observance of selection criteria (e.g. the growth stage of the cultivated plants, environmental conditions, the classification of pesticides, the characteristics of pesticides, the factors influencing pesticide efficacy) • Appropriate choice of adjuvant
3. Prepare the materials and equipment for the pesticide application.	• Appropriate choice of application equipment • Appropriate choice of protective equipment for the pesticide preparation and application • Verification of the condition of the equipment • Calibration of the equipment according to recommendations

4. Prepare the product.	• Organization of an appropriate area in which to prepare and handle the product • Accurate interpretation of the information on the pesticide label and toxicological data sheet • Accurate calculation of the quantity of pesticide to prepare, based on the surface area to treat • Accurate calculation of the concentration of the mixture, based on instructions for the product • Accurate calculation of the product's application rate • Homogeneous mixture • Proper disposal of empty containers
5. Apply the pesticide.	• Consideration of ambient conditions • Consideration of precautions to take to minimize pesticide exposure • Continuous verification of the operating condition and flow of the equipment used • Appropriate circulation technique • Control of pesticide drift • Safe disposal of leftover product and wash water • Maintenance, decontamination and storage of protective equipment and application materials
6. Assess the action taken.	• Assessment of the treatment's efficacy • Determination of factors confirming the treatment's success or failure
7. Record technical information in the pesticide usage log.	• Recording of all information, including plants treated, description of the problem, treatment applied, quantity of pesticide used, treatment result
8. Plan an integrated pest management strategy.	• Compliance with the different steps in the integrated pest management program • Relevance of actions associated with the strategy

For the competency as a whole:

- Compliance with occupational health and safety rules
- Compliance with the laws and regulations governing environmental protection and pesticide use
- Adoption of practices recommended by the Ministère du Développement durable, de l'environnement et des Parcs
- Ongoing concern for the effects of pesticides on the environment
- Proper use of equipment
- Logical sequence of operations

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Develop a one-time action plan to control plant pests.

• Associate biotic or abiotic agents with the characteristics of the damage identified.	Reflection on the consequences of pesticide use in protected cultivation Interpretation of visual and morphological signs Identification of pests
• Measure the extent of the damage.	Sampling methods Calculation of economic threshold levels Consultation of action logs

2. Choose a pesticide.

• Compare the pest management tactics available.	Advantages and disadvantages, based on conditions for use and the pest's life cycle
• Identify the consequences of pesticide use for the environment and health.	Source of reliable information on safe pesticide use Scope and limitations of scientific knowledge Short-term and long-term effects of pesticides on plants and animals Effects on human health
• Identify the various regulatory provisions governing pesticide use.	Roles and responsibilities of the various levels of government Current laws and regulations Certification standards

• Distinguish different pesticides based on their properties and the conditions for their effective use.	Physical and chemical characteristics, formulation and mode of action Compatibility between pesticides and adjuvants Ambient conditions Growth stages of the plants and the organism treated
3. Prepare the materials and equipment required for the pesticide application.	
• Select the pesticide application equipment and the protective equipment.	Identification of various types of pesticide application equipment Conditions for use Effectiveness of personal protective equipment, based on the products used and exposure
• Check the equipment and make the necessary adjustments.	Application of procedure recommended in manufacturers' manuals Techniques for adjusting the flow rate and boom height of the sprayer
• Interpret the information on the pesticide label and toxicological data sheet.	Personal protective measures specific to greenhouse pesticide application Precautions specific to products Obligations stipulated in the regulations Rules to follow concerning the layout of the work area Importance of planning purchases Protocols for the disposal of empty containers
4. Prepare the product.	
• Consult toxicological data sheets.	Interpretation of data sheets
• Calculate quantities and apply mixing protocols.	Calculation of doses and dilutions Mixing protocol and techniques: wettable powders, liquid concentrates, emulsions, pesticide packets
5. Apply the pesticide.	
• Handle application equipment.	Recognition of the importance of using application equipment properly Handling technique specific to each type of equipment Applicable safety rules
• Observe environmental conditions that can impede the quality of the application.	Temperature, ventilation, air convection, relative humidity, soil texture, soil type and degree of wetness of the foliage Adaptation of the application to the environmental conditions

• Take precautions to minimize the risk of human and environmental exposure to pesticides.	Precautions specific to greenhouse application Precautions based on the source of exposure Procedure for disposing of leftover products and wash water Procedure for maintaining, decontaminating and storing equipment
6. Assess the action taken.	
• Assess the relative importance of criteria used to assess efficacy.	Reference to the usual criteria and their relative weight, depending on the type of problem and treatment
• Verify the results of a treatment in protected cultivation.	Signs to check in order to assess treatment efficacy and determine the factors responsible for treatment failure
7. Record technical information in the pesticide usage log.	
• Recognize the importance of pesticide usage logs.	Recording of all technical information, including crop/plant treated, description of the problem, treatment used, pesticide quantity used, treatment result
8. Plan an integrated pest management strategy.	
• Describe integrated pest management.	Strategies and methods specific to protected cultivation Compatibility between management tactics Usual planning steps

Information Search	Code: 705272

Competency 16 Duration 30 hours Credits 2

Behavioural Objective

Statement of the Competency

Look for horticultural information.

Achievement Context

- In any horticultural situation that involves searching for information (e.g. identifying a plant; diagnosing a plant health problem; researching new trends; identifying new suppliers; learning about work methods)
- Using a computer with an Internet connection; computerized databases on horticultural products and services; samples and catalogues of suppliers of horticultural products and services; reference documents, etc.

Elements of the Competency	Performance Criteria
1. Become familiar with a request for information.	• Accurate interpretation of search objectives
2. Select sources of information.	• Appropriate choice of sources of information • Extensive list of diverse sources • Determination of appropriate search criteria
3. Gather information.	• Complete, relevant information gathered about a living or inert product, a supplier or new developments in horticulture • Appropriate sorting of the information gathered, based on its relevance • Validation of the relevance of the information gathered by the person in charge • Proper use of electronic and conventional sources of information
4. File information.	• Methodical storage and filing of information gathered
	For the competency as a whole: • Rigorous application of a research method • Proper use of computer equipment • Compliance with instructions

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Become familiar with a request for information.

• Determine the area of horticulture to research.	Search for information on horticultural products and suppliers, plant protection, horticultural techniques or trends Other related topics: products, principles and techniques associated with landscaping, floriculture, horticultural production, arboriculture, maple sugaring, forestry, etc.
• Determine the nature of the request and the corresponding search objectives.	Nature and origin of requests: request from customers, employers or coworkers; lack of personal knowledge about a topic and related principles and techniques; inability to perform a task Characteristics of the request and person making the request Type of search, based on the response expected: information about a product and its characteristics, work methods, new developments, etc. Time required to find the information requested

2. Select sources of information.

• List and classify different sources of information by subject.	Association of information sources with potential horticulture-related themes Content and type of information: photos, descriptions, prices, work methods, etc. Limitations: quantity of information, availability, access, reliability, etc. Creation of a personal directory of information sources
• Choose sources of information, based on various requests.	Relevance and reliability of sources of information, with respect to the initial request Criteria for selecting possible sources

3. Gather information.

• Search for information.	Determination of search strategies Internet search: use of a search engine, determination of keywords to use with the search engine, selection of potential sites (browsing), bookmarking interesting Web sites (favourites), processing the information found Adaptation of search method to the type of information source used: book, Internet, software, trade magazine, other

• Sort the information gathered.	Criteria for selecting information: relevance of the information with respect to the request Accuracy of information Classification of information Validation of information
4. File information.	
• Store and file information.	Creation of files by theme Document storage Logical filing system
• Scan various documents.	Use of a scanner Transfer of printed information to a digital format Processing digital information: texts, images
• Print documents.	Use of a printer Printing
• Forward the information gathered to the person who requested it.	Use of word processing and database software Organization of information and summaries of essential elements, in accordance with the request Presentation of the search results Use of various means of communication: fax, e-mail, telephone, mail delivery, person-to-person

Indoor Plants	Code: 705286

Competency 17 Duration 90 hours Credits 6

Behavioural Objective

Statement of the Competency	**Achievement Context**
Maintain indoor and potted flowering plants.	• In a greenhouse, an indoor space decorated with plants or to be decorated, etc. • Using indoor plants and flowering plants in pots, containers or planters, etc.; landscape plans • Using the necessary materials, such as potting soil, fertilizers, pesticides, stakes, pots, planters; the necessary tools and equipment; personal protective equipment; reference documents or specialized software
Elements of the Competency	**Performance Criteria**
1. Distinguish indoor plants and potted flowering plants.	• Accurate identification of the main features, morphology, size and habit of the plants to maintain • Accurate identification of indoor plants and potted flowering plants
2. Plan the maintenance of indoor and potted flowering plants.	• Accurate determination of the plants' specific needs • Systematic verification of ambient conditions • Appropriate control of ambient conditions • Appropriate choice of maintenance operations
3. Prune and clean plants to maintain their vigour.	• Systematic elimination of dead leaves and spent flowers • Appropriate cutting of stems that undermine the plant's vigour and appearance • Appropriate pinching back and bud pruning, based on the desired result • Proper, thorough dusting, based on the type of plant

4. Repot plants.	• Accurate assessment of repotting needs • Appropriate choice of container and substrate • Homogeneous, sufficiently moist mixture • Careful removal of the plant from the pot • Appropriate positioning of the plant in the new container • Proper planting depth • Proper tamping of the substrate • Sufficient watering • Proper installation of suspension material, if applicable
5. Stake plants.	• Accurate assessment of needs • Choice of appropriate stake • Solid, attractive stake
6. Water and fertilize plants.	• Accurate assessment of watering needs • Uniform, sufficient watering • Appropriate choice of fertilizer • Proper dose • Correct application of technique for spraying foliage and soil
7. Detect and control plant health problems.	• Application of a logical problem-solving technique • Accurate determination of the problem • Appropriate action, based on the problem identified • Proper application of integrated pest management methods
8. Fill out a maintenance chart.	• Relevant information • Clear information
9. Arrange an indoor plantscape.	• Choice of healthy plants • Attractive orientation of the plants • Conformity with the plan • Clean containers and plants
	For the competency as a whole: • Thorough planning • Thorough verification of the quality of the work • Compliance with occupational health and safety rules • Proper use of tools and equipment • Thorough use of search tools • Observance of the characteristics of different species • Clean, careful work • Respect for the environment

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Distinguish indoor plants and potted flowering plants.

• Describe indoor plants and potted flowering plants.	Distinction between indoor plants, potted flowering plants, flowering plants, bouquets, etc. Identification of the genus and species, in English and Latin, of the most common indoor plants and potted flowering plants sold in Québec Determination of characteristics: habit, size, appeal, foliage, flowers, colour, specific features, use, toxicity, growth cycle, etc. Determination of environmental conditions for cultivation: light, water, temperature and humidity, substrate

2. Plan the maintenance of indoor plants and potted flowering plants.

• Inspect plants in order to plan the work to be done.	Verification with respect to plant needs: watering, fertilization, pruning, repotting, staking, propagation, cultivation, resting period and pest control treatment Choice of maintenance operations required
• Set the controls to regulate ambient conditions.	Verification of conditions in relation to the plants' specific needs Use of equipment to check conditions: luxmeter, thermometer, hygrometer, probe, etc. Setting of ambient controls

3. Prune and clean plants to maintain their vigour.

• Choose a pruning technique.	Maintenance pruning, rejuvenation pruning, pinching back, bud pruning, etc. Justification of choice in relation to pruning principles and techniques, needs and the desired result
• Choose a technique for cleaning foliage.	Effects of dust on plant growth and vigour Washing, wiping with a cloth, brushing Justification of the chosen technique, based on the species to clean
• Apply different techniques for maintaining plant vigour.	Techniques for eliminating dead leaves and spent flowers Stem cutting and aesthetic principles Pinching back and bud pruning techniques for different species Dusting and cleaning techniques

4. Repot plants.	
• Identify signs that a plant needs to be repotted.	Signs with respect to the root ball, watering needs, growth and vigour, etc.
• Choose the right size container.	Type of pot and use Assessment of the future pot's size
• Choose and prepare the substrate.	Description of the main substrates used for indoor plants and connections with the requirements of different species Criteria for selecting the appropriate substrate Preparation techniques
• Observe the different steps in the procedure and apply the corresponding techniques.	Techniques and items to check Manual repotting Mechanical repotting
5. Stake plants.	
• Assess whether various plants need to be staked.	Analysis of the plants' morphology Distinction between possible types and styles of stakes Circumstances for the use of a stake Association of types of stakes with the plants' specific needs Staking techniques
• Install stakes.	Selection of stakes Installation techniques Necessary precautions
6. Water and fertilize plants.	
• Interpret signs that a plant needs water.	Observation of visual signs Observation of tactile signs Interpretation of other signs
• Recognize the importance of watering for plant growth and vigour.	Consequences of inadequate watering in terms of water quality; quantity and frequency of watering; season and developmental stage; water requirements of the plants to water
• Apply different watering techniques.	Manual watering from the top and bottom Self-watering using a water wick or watering mat, self-watering pots, drip irrigation, etc. Use of different watering equipment

• Choose fertilizers.	Interpretation of signs indicating nutrient deficiency or toxicity Description of different fertilizer formulas used for indoor plants or potted flowering plants Choice and preparation of fertilizers based on the requirements of the plant species, their developmental stage, the season, desired effect, etc.
• Fertilize plants.	Calculation of dose and preparation of mixture Use of equipment required Application technique
7. Detect and control plant health problems.	
• Inspect plants.	Inspection principles and techniques specific to indoor plants and potted flowering plants Identification of signs of pests
• Identify pests on indoor plants and potted flowering plants.	Insects, mites and diseases Conditions for development, life cycle or biology and other relevant characteristics Association of damage or symptoms with the pest responsible
• Develop an intervention strategy.	Analysis of the problem and solution Types of possible actions, taking into account integrated pest management principles Timing and frequency of treatment
• Apply a pest control treatment.	Choice of application equipment Application of personal and environmental protection measures when preparing the mixture
8. Fill out a maintenance chart.	
• Note actions and observations made while caring for plants.	Importance of ensuring regular follow-up and establishing a maintenance routine Identification of the plants maintained Identification of the plant-care worker in charge Information on the maintenance tasks performed Recording of observations, the type of action and date performed
9. Arrange an indoor plantscape.	
• Recognize the range of design possibilities.	Potential customers Types of projects and contracts Types of services
• Use basic interior design rules.	Role of plants in interior design Observance of the environmental needs of plants Application of rules of aesthetics in arranging plants Solutions to different types of design problems

Indoor Plants	Code: 705286
• Choose healthy, attractive plants.	Importance of choosing healthy, vigorous plants Importance of the aesthetic orientation of plants Importance of cleaning plants and their containers
• Interpret an indoor plantscape plan.	Design of a small space based on a plan Choice of plants in conformity with the plan Location of plants and accessories

Communication in the Workplace	Code: 705291

Competency 18 Duration 15 hours Credit 1

Situational Objective

Statement of the Competency

Communicate in the workplace.

Elements of the Competency

- Understand the principles of communication.
- Apply communication techniques specific to horticulture.
- Apply communication techniques specific to garden centre sales.
- Apply techniques and principles related to teamwork.
- Become aware of their strengths and weaknesses regarding their ability to communicate.

Learning Context

Information Phase

- Learning about the communication process.
- Determining the factors that hinder and promote effective communication.
- Learning about the characteristics of verbal and nonverbal communication.
- Learning about the main communication problems encountered in the workplace.
- Examining their communication skills based on their personal experience.

Participation Phase

- Participating in group activities that allow students to practise different communication techniques related to sales: active listening, asking questions, paraphrasing, etc.
- Participating in scenarios on attitudes and behaviours that promote cooperation in a team.

Synthesis Phase

- Analyzing, on their own, situations that highlight their strengths and weaknesses regarding their ability to communicate and work in a team.
- Producing a report summarizing their strengths and weaknesses regarding their ability to communicate and work in a team.

Instructional Guidelines

- Provide the students with the necessary sources of information.
- Create a climate conducive to personal growth.
- Promote discussion by applying facilitation techniques.
- Stimulate personal expression.
- Provide the necessary support to help students carry out the activities.
- Encourage the use of effective communication techniques inside the classroom.
- Develop scenarios that are representative of the workplace.
- Promote concern for proper attire, personal hygiene and good grooming.
- Use means such as video recording to observe and analyze behaviour.
- Encourage and support students who have difficulty communicating.

Participation Criteria

Information Phase

- Consult the sources of information available.
- Indicate at least one strength and one weakness regarding their personal communication style.

Participation Phase

- Participate in different activities.
- Seek to develop the attitudes and behaviours required of garden centre sales consultants.
- Seek to develop the attitudes and behaviours that promote cooperation in a team.

Synthesis Phase

- Produce a report containing:
  - at least three strengths and three weaknesses regarding their ability to communicate and work in a team
  - at least two ways of improving their ability to communicate and work in a team

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each phase of the learning context, along with their attendant guidelines.

Information Phase

• Discuss the importance of communication in the workplace.	Consequences of effective and ineffective communication
• Learn about the communication process.	Communication process: intention, sender, message, receiver, feedback, effects, context List of obstacles to communication and factors that promote it
• Learn about the main problems associated with types of communication and the workplace.	Types of communication: assertive, non assertive, passive, aggressive and manipulative Communication with superiors, coworkers, suppliers and customers

• Examine their communication skills based on their personal experience.	Personal strengths and weaknesses
Participation Phase	
• Discuss the main rules governing group discussions.	Respect, listening, participation Waiting one's turn to speak
• Practise the different communication techniques used in a work setting.	Active listening, asking questions, paraphrasing, adapting one's communication style to the other person
• Adopt attitudes and behaviours that promote cooperation in a team.	Constructive criticism Respect for other people's expertise and prerogatives Feedback Valuing the contribution of others Knowing how to gain respect by respecting others
Synthesis Phase	
• Analyze, on their own, situations that highlight their strengths and weaknesses regarding their ability to communicate and work in a team.	Personal evaluation Objectives for improvement
• Produce a report summarizing their strengths and weaknesses regarding their ability to communicate and work in a team.	

Designing a Plan	Code: 705307

Competency 19 Duration 105 hours Credits 7

Behavioural Objective

Statement of the Competency

Design a plan for a garden.

Achievement Context

- Based on a site to be landscaped; photos of the site; the site's location plan (residential or commercial); information about the customer's needs, preferences and budget
- Using measuring instruments; drafting materials; a computer and drafting software; reference documents (suppliers' catalogues, price lists, manuals, etc.)

Elements of the Competency	Performance Criteria
1. Analyze information.	• Listening attentively to the customer • Gathering of necessary information • Compliance with the customer's specific needs, preferences and budget • Accurate, precise measurements and elevations • Methodical observation of the site
2. Draw a freehand sketch.	• Quick execution • Legible, attractive sketch • Appropriate choice of plants
3. Produce a scale drawing of the site and its existing features.	• Observance of the scale and proportions • Accurate location of the features to be kept
4. Organize spaces.	• Proper planning and organization of different spaces
5. Sketch the form of the infrastructure and traffic areas.	• Harmonious, attractive choice of materials for the infrastructure and traffic areas • Functional, aesthetic planning of the infrastructure and traffic areas • Observance of actual proportions
6. Draw the flower beds.	• Functional, balanced, harmonious flower beds
7. Draw the plants.	• Appropriate choice of plants, based on factors such as exposure, plant height and colour, bloom time, hardiness and size at maturity • Compliance with the basic rules of landscape design in the choice and layout of plants

8. Estimate the cost of the plants and raw materials required for planting.	• Accurate estimate of the quantities of plants and raw materials required for planting • Accurate determination of the cost of the plants and raw materials required for planting • Accurate, precise calculations
9. Prepare a virtual representation of a section of the final plan.	• Appropriate choice of section to represent • Proper use of the program's basic functions • Conformity of the representation with the final plan
10. Present the plan to the customer.	• Clear, accurate information • Convincing arguments • Emphasis placed on the most important elements of the plan
	For the competency as a whole:
	• Observance of initial constraints • Compliance with the basic rules of landscape design • Compliance with municipal regulations and by-laws • Correct spelling • Overall cleanliness of the plan • Original landscape design • Polite, respectful, professional attitude towards the customer • Neat appearance

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Analyze information.

• Ask the customer questions.	Questions about preferences and requirements regarding the project Compilation of information
• Survey the site.	Characteristics of the residence Characteristics of the lot Analysis of various constraints
• Take measurements and measure land elevations.	Use of various measuring tools Techniques for taking measurements and measuring land elevations Measurement and location of windows, doors, entrances, driveway, patio, garden shed, existing plants, etc.

• Compile the information gathered.	Compilation of observations, measurements, elevations and location of existing features on paper
2. Draw a freehand sketch.	
• Gather all the relevant information.	Customer needs and preferences and specific project requirements
• Choose the plants.	Selection of species according to seasonal interest and project requirements Design principles based on best practices
• Draw the forms.	Rough, two-dimensional, three-dimensional forms, elevations, representation of the natural forms of the plants chosen
• Sketch the proposed layout.	Execution of various sketches based on written descriptions and photos Execution of various sketches when interacting with the customer Various constraints and time limits
3. Produce a scale drawing of the site and its existing features.	
• Prepare the work area.	Drafting table and parallel rule, square, compass, protractor, etc. Metric and imperial engineer's rule Types of paper: regular (photocopy), velin (original drawing), tracing (rough drawing and sketches)
• Apply techniques for transcribing elements.	Techniques for using drafting instruments and materials Transfer, at a reduced scale, of the information in the certificate of location onto the future planting plan Location of existing features on the plan, based on measurements previously taken on site Rule of three, triangulation
4. Organize spaces.	
• Analyze possible ways of organizing space.	Potential of the site Front yard, back yard or other Layout of the spaces Logical, attractive, functional use of space
• Create the basic concept.	Decision making, location and bubble diagrams (circles) of different spaces on rough paper Application of principles of spatial organization Principles and techniques for optimizing the use of space on the site Solutions to landscape design problems

5. Sketch the form of the infrastructure and traffic areas.

• Describe the different infrastructure and traffic areas of an ornamental garden.	Distinction, use and standard dimensions Basic principles of building techniques Standards, laws and regulations Materials used and style sought
• Shape the outline of different infrastructure and traffic areas.	Choice of form, line, texture and colour Adaptation of the form and dimension to the type of infrastructure and traffic Drawing of infrastructure and traffic areas

6. Draw the flower beds.

• Determine where to place the flower beds.	Determination of the desired function of the flower beds Selection of best places to incorporate flower beds
• Choose the style or form.	Forms: rectilinear, irregular, curvilinear, tangent arc, radial, etc. Styles: contemporary, cottage, Mediterranean, French, English, other. Adaptation of the style and forms to the creation of a style or form
• Create flower beds.	Broad forms and lines Dimension Harmony Balance Simplicity

7. Draw the plants.

• Refer to the function of plants in a landscape design.	Climatic conditions (creation of a microclimate) Soil stabilization Decrease in pollution Creation of a welcoming environment for animals Aesthetics, privacy, mood Structure of space
• Associate the climatic conditions of the site with plant requirements.	Sun and shade, hardiness zone, soil type and pH, available space, dominant winds
• Apply the rules of design to landscaping with plants.	Importance of year-round seasonal interest Structure: frame, background, points of interest, screens Composition of planting areas, based on the plants' function: focal point, contrast, background, transition, foreground Importance of the plants' visual effect: groupings (odd numbers), varying plant height, repetition Colour combinations: primary, secondary, tertiary, etc.; complementary, analogous; properties and possible effects

• Create the setting for plants.	Planning of the structure and establishment of specific needs in terms of plants Choice of species that may be used in the structure Location of strategic points in the flower beds and determination of their function Choice of plants that can fulfill different functions Consideration of seasons, colours, customer's preferences and needs, climate and other specific requirements of plants, etc.
• Complete the plan.	Integration of all the elements of the concept Techniques for finalizing plans Additional information: legend, plant list, title block, identification of infrastructure, plants and existing features Use of codes Techniques for quality presentation: rules for finalizing and writing on a plan, physical integrity of a plan

8. Estimate the cost of the plants and raw materials required for planting.

• Calculate the number of plants required.	Number of deciduous and coniferous trees Number of perennials, annuals, bulbs and aquatic plants Estimate of the lawn surface area and calculation of the quantity of grass seed or rolls of sod required
• Calculate the amendments and fertilizers.	Measurement of surface areas Calculation of volumes of amendment (e.g. compost, planting soil, peat moss) Calculation of quantities of fertilizer required for planting (e.g. bone meal, transplant fertilizer, lawn fertilizer)
• Determine the quantities of flower bed ground cover and inert materials required.	Stakes and ties, trellises, supports, etc. Bed edging, geotextiles, river rock or decorative stones, mulch or other
• Research prices.	Consultation of suppliers' catalogues and list prices
• Calculate costs.	Determination of the calibre of plants to purchase, based on supplier availability, budget and the immediate effect sought Association of prices with corresponding items Complete calculation for each item Calculation of subtotals for each category of item (e.g. plants, amendments and fertilizers, flower bed ground cover) Addition of all subtotals in order to establish the total cost

• Estimate the cost of the plants and raw materials required for planting.	Estimates for simple plans or flower beds

9. Prepare a virtual representation of a section of the final plan.

• Scan images.	Image scanning, saving and filing
• Choose the section of the plan to represent.	Location of the image bank in the program Selection of an appropriate, representative image
• Clean up the image.	Adjustment of brightness and colours Addition or deletion of elements and textures
• Manipulate the image.	Addition of inert elements Adjustment of the proportions and perspective of the elements added Adjustment of the proportions and perspective of the plants Installation of mulch, decorative stone, soil or other flower bed ground covers used in the plan
• Save and file the finished virtual representation.	Saving and filing
• Print the manipulated images.	Location and selection of the image in the program Choice and adjustment of printing parameters Placement of paper Printing

10. Present the plan to the customer.

• Explain to the customer how to read and interpret a plan.	Orientation and location of existing features on the plan, in order to help the customer visualize the site Explanation of the legend and meaning of different codes and symbols
• Explain to the customer the connections between the proposed landscape design and the parameters of the request.	Review of initial requirements Justification for choosing the main elements of the plan Adoption of a customer-oriented approach

Machinery and Equipment	Code: 705312

Competency 20 Duration 30 hours Credits 2

Behavioural Objective

Statement of the Competency

Maintain horticultural machinery, tools and equipment.

Achievement Context

- Using machinery and equipment commonly used in horticulture
- Based on instructions or malfunctioning machinery and equipment
- Using the technical documentation available (e.g. maintenance manuals, manufacturers' guides); the necessary tools, spare parts and products; personal protective equipment

Elements of the Competency	Performance Criteria
1. Check the operating condition of machinery, tools and equipment.	• Accurate location of common check points • Thorough verification of the operating condition • Application of necessary corrective action
2. Sharpen the cutting blades of machinery, tools and equipment.	• Appropriate choice of sharpening tools • Correct application of sharpening techniques • Satisfactory cutting profile • Use of safety goggles and gloves
3. Lubricate and adjust movable parts.	• Appropriate choice of lubricants • Precise adjustment of parts
4. Change the oil, filters and spark plugs.	• Appropriate choice of oil; gas, air and oil filters; and spark plugs • Correct application of oil changing techniques, in accordance with the type of engine
5. Check the fuel.	• Thorough verification of the condition and level of fuel in the tank • Appropriate choice of fuel to use, in accordance with the manufacturer's recommendations
6. Replace or make minor repairs to defective or broken parts.	• Accurate identification of the cause of breakage • Appropriate choice of replacement parts • Appropriate replacement or repair of defective parts • Accurate adjustment
7. Clean machinery, tools and equipment.	• Thorough cleaning of various parts • Rational disposal of grease, excess oil, grass debris, soil and rust • Cleanliness of machinery, tools and equipment

8. Fill out maintenance charts or logs.	• Relevant information • Clear information
9. Store machinery, tools and equipment.	• Proper preparation of machinery, tools and equipment for winter • Appropriate storage
	For the competency as a whole: • Compliance with instructions • Compliance with occupational health and safety rules • Observance of the sequence of maintenance operations • Observance of work techniques • Observance of limits to which tools may be used • Respect for the environment

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Check the operating condition of machinery, tools and equipment.

• Identify how horticultural and gardening machinery, tools and equipment are used and operated.	Machinery: lawn tractor Equipment: cultivator, aerator, dethatcher, chain saw, power hedge trimmer, brush cutter, sprayer, lawn mower, etc. Tools: pruning shears, shovels, wheelbarrow, rakes, knives, saws, scythes, etc. Techniques for using machinery, tools and equipment Precautions for the user and the environment when using and handling machinery, tools and equipment
• Recognize the main types of malfunctions in machinery, tools and equipment.	Identification of check points Recognition of improper adjustments by sight and sound
• Determine the corrective action to take.	Adding oil or fuel Adjusting the carburetor Bleeding the compressor Adding air to or changing a tire Cleaning and adjusting filters and spark plugs Adjusting pruning shears

• Inspect machinery, tools and equipment.	Use of manufacturers' manuals: technical diagrams, inspection procedure and frequency, recommendations Inspection techniques Formulation of a diagnosis

2. Sharpen the cutting blades of machinery, tools and equipment.

• Recognize a well-sharpened part by sight.	Identification of cutting blades on tools, equipment and machinery Qualities of a well-sharpened blade: cutting profile (angle), cutting edge and overlap
• Understand the importance of adopting safe work methods.	Use of safety gear and equipment Safe work methods Adoption of prudent attitudes
• Choose and apply a sharpening method.	Sharpening tools and techniques Association of sharpening methods with the blades or knives of tools, machinery and equipment Work methods Health and safety rules

3. Lubricate and adjust movable parts.

• Identify the movable parts of tools and equipment.	Check points: belts, knives and blades Distinction between properly and improperly adjusted movable parts Identification of lubrication and adjustment needs
• Choose a lubricant, based on the manufacturer's recommendations.	Description of different lubricants Association of lubricants with the corresponding movable part Application of the manufacturer's recommendations regarding lubrication Application of the manufacturer's recommendations regarding the adjustment of movable parts

4. Change oil, filters and spark plugs.

• Identify and locate the oil pan, filters and spark plugs on machinery and equipment.	Identification of different oil pan, filters and spark plugs Consultation of the manufacturer's guide
• Choose the oil, filters and spark plugs.	Oil: in accordance with codification, season, type of equipment and engine Filters and spark plugs: in accordance with the manufacturer's guide or any other appropriate reference guide

• Apply different techniques for changing oil, filters and spark plugs.	Use of tools Disconnecting spark plugs Location and removal of the oil pan drain plug Recovery of drained oil Quantity of oil to add Logical execution, according to the type of machinery and equipment Work methods

5. Check the fuel.

• Describe types of fuel.	Fuel mixes: proportions Straight fuels: octane rating Diesel Association of fuel with machinery or equipment
• Check the condition and level of the fuel.	Location of fuel tank Level Condition: verification of last fill date, colour, impurities, odour Draining and filling Recovery of impure fuel

6. Replace or make minor repairs to defective or broken parts.

• Define the extent of the plant-care worker's role in making repairs.	Distinction between major repairs and minor repairs
• Identify the parts to replace or repair.	Machinery: tires, blades, belts, caps/plugs Equipment: tires, blades, belts, pull chord, caps/plugs Tools: handles, tires and blades
• Apply different repair and replacement techniques.	Principles and techniques Methodology Health and safety Consultation of manufacturer's guide Techniques for removing and installing parts, disassembling and reassembling components

7. Clean machinery, tools and equipment.

• Develop a concern for cleanliness in order to maintain equipment in good working order.	Importance of cleaning for the health and safety of users and the proper performance of machinery, tools and equipment
• Identify different techniques for cleaning machinery, tools and equipment.	Parts to be cleaned Type of dirt or debris Cleaning products Safe cleaning methods

8. Fill out maintenance charts or logs.

• Identify the maintenance charts for different equipment used.	Importance of follow-up Sections: oil change, lubrication, cleaning spark plugs and filters, sharpening, carburetor adjustment and hours used

9. Store machinery, tools and equipment.

• Prepare machinery, tools and equipment for storage.	Draining the fuel tank and lines, or adding a fuel additive Draining compressor hoses, bleeding the sprayer and storing the manometer Checking the oil quality and level Sharpening blades Scheduled maintenance (based on hours of use) Cleaning and greasing Storage places and techniques

Lawns	Code: 705324

Competency 21 Duration 60 hours Credits 4

Behavioural Objective

Statement of the Competency	Achievement Context
Start and maintain lawns.	• On a site to be turfed or an existing lawn to be maintained • Based on instructions or a maintenance program • Using raw materials such as sod rolls, soil, amendments, seeds, fertilizers, pesticides, soil testing equipment; the necessary machinery, tools and equipment (e.g. manual lawn mower or tractor with front-mounted mower); personal protective equipment

Elements of the Competency	Performance Criteria
1. Prepare surfaces.	• Proper protection of existing features • Proper disposal or recovery of debris • Preliminary grading to promote natural surface water drainage, in accordance with standards
2. Establish the rough grade.	• Appropriate establishment of finished grading elevations • Proper excavation and backfilling • Proper compacting of fill materials • Uniform surface, parallel to preestablished elevations
3. Establish the final grade.	• Uniform spreading of substrate or top soil • Appropriate thickness of substrate or top soil after rolling • Choice of appropriate amendments for the soil test results or instructions • Accurate calculation of quantities of amendment and rooting fertilizer needed • Uniform, homogenous application of amendments and rooting fertilizer, to an appropriate depth • Even, uniform surface with fine, loose texture • Effective surface water drainage

Lawns	Code: 705324
4. Lay sod.	• Accurate calculation of the quantity of sod required • Uniform installation, with staggered seams between sod strips • Absence of overlap or gaps between sod strips • Installation technique adapted to the topography of the site • Proper rolling of sod • Thorough, uniform watering, to an appropriate depth
5. Seed a lawn.	• Appropriate choice of seed mix • Accurate calculation of the quantity of seed required • Uniform scattering of a sufficient quantity of seed • Incorporation of seed to an appropriate depth • Proper rolling of the seeded surface • Thorough, sufficient watering of the seeded surface • Absence of runoff on seedbed
6. Dethatch and top dress established lawns.	• Observance of best time to dethatch lawns • Accurate determination of dethatching needs • Proper thickness of removed thatch • Appropriate choice of amendment or top dressing substrate • Appropriate quantity and uniform application of amendment or substrate
7. Aerate the soil of established lawns.	• Accurate identification of the main signs of compaction • Appropriate density and depth of aeration • Correct application of aeration technique
8. Mow established lawns.	• Careful cleaning of surfaces to be mowed • Proper blade height • Timing conducive to vigorous growth • Respect for nearby plants • Mowing height promotes root growth • Uniform grass height over the entire lawn surface
9. Fertilize established lawns.	• Appropriate choice of fertilizer to apply • Accurate calculation of the quantity of fertilizer to apply • Proper calibration of equipment • Uniform, sufficient fertilizer application

10. Apply integrated pest management methods.	• Methodical detection of pests • Accurate determination of the cause of the problems detected • Use of an appropriate search method • Choice of an appropriate strategy • Methodical application of pest control treatment • Appropriate choice of preventive strategy to apply during routine maintenance
11. Fill out a maintenance chart.	• Relevant information • Clear information
	For the competency as a whole: • Compliance with instructions • Compliance with current standards • Compliance with occupational health and safety rules • Proper use of machinery, tools and equipment • Clean, careful work • Thorough verification of the quality of the work • Respect for the living materials used • Consideration of different ecological practices • Cooperation and respect for teammates

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Prepare surfaces.

• Recognize the importance of proper surface preparation when sowing or sodding a lawn.	Consequences of improper surface preparation: drainage problems; development of pests; maintenance problems due to uneven surface
• Apply protective measures.	Preservation of existing buildings and plants, underground features, boundary markers and water features
• Clean the site.	Elimination of contaminated soil, undesirable plants and various debris
• Recover top soil.	Recovery techniques and standards: edaphic characteristics, storage
• Grade the site in order to promote surface drainage.	Direction of the slope Gradient required to promote proper drainage Installation of a drain, if necessary

2. Establish the rough grade.	
• Establish different finished grading elevations.	Location of different spaces: flower beds, lawn areas, infrastructure (e.g. patio, walkways), etc. Use of optical level and other tools required for staking out, taking measurements and determining elevations
• Excavate and backfill.	Compacting of backfill materials Levelling of substructure Use of equipment
3. Establish the final grade.	
• Spread the substrate.	Choice of substrate and calculation of the quantity required Characteristics of the substructure required for spreading the substrate Spreading and compacting techniques
• Amend and fertilize.	Choice and calculation of amendments and fertilizers Techniques for applying and incorporating amendments and fertilizers
• Level the surface.	Rolling and raking principles and techniques Tools
4. Lay sod.	
• Explain the environmental conditions required for deep rooting of sod.	Temperature, humidity level, precipitation, sunlight, etc.
• Install sod.	Calculation of the quantity of sod required Techniques for laying sod, based on topography of the site, the direction of the strips, seams, contact with soil Tools
• Roll and water sod.	Rolling: purpose, principles and techniques Watering: need, quantity, frequency, techniques
• Renovate a lawn.	Removal of lawn section to renovate Addition of topsoil: need, quantity Installation of sod at the same level as existing lawn Principles and techniques to blend seams between existing grass and new grass
5. Seed a lawn.	
• Assess the conditions of the site.	Environmental conditions Physical conditions

• Choose the grass species.	Characteristics: resistance to disease, morphology, colour, growth rate, wear resistance, vigour, etc. Needs: sunlight, watering, soil type, fertilization Use: residential, sports field, golf, etc. Exploration of alternatives to grass Selection of species based on the site assessment
• Sow seeds.	Measurement of the surface area to seed Calculation of the quantity of seed required, based on the species selected, the area to cover and the supplier's recommendations Principles and techniques of scattering and incorporating seed Tools and equipment Top dressing and seed protection, if applicable
• Roll and water seeds.	Rolling: purpose, principles and techniques Watering: need, quantity, frequency, techniques

6. Dethatch and top dress the surface of established lawns.

• Identify the principles of dethatching.	Importance of dethatching as part of an integrated pest management strategy Identification of the need to dethatch a lawn Techniques and equipment Ideal time Thickness of the thatch removed
• Identify the principles of top dressing.	Importance of top dressing as part of an integrated pest management strategy Choice of amendment and calculation of the quantity required Ideal time Technique and tools

7. Aerate the soil of established lawns.

• Identify the principles of aeration.	Importance of aeration as part of an integrated pest management strategy Purpose Techniques and equipment Ideal time

8. Mow established lawns.

• Identify the principles and techniques of lawn mowing.	Importance of mowing as part of an integrated pest management strategy Mowing height and frequency, depending on the time of year Mowing pattern and uniformity Operation of equipment

9. Fertilize established lawns.	
• Describe different lawn fertilizer formulas.	Importance of fertilization as part of an integrated pest management strategy Types of fertilizers: organic and chemical Nutrient content Spring, summer, fall fertilization Identification of nitrogen, phosphorus and potassium (N-P-K) deficiency or toxicity in a lawn
• Describe how to operate fertilization equipment.	Spreaders Sprayers Connection with the type of fertilizers used
• Choose and calculate fertilizers.	Measurement of the surface area to cover Choice based on the season and needs Calculation of quantities required
• Apply fertilizers.	Application technique based on the equipment and type of fertilizer: application rate, calibration of equipment
10. Apply integrated pest management techniques.	
• Inspect the lawn.	Recognition of ideal conditions for the development of pests Detection techniques specific to each pest
• Develop a preventive and corrective strategy.	Determination of the cause of the infestation or problem Connection with the different lawn maintenance operations Tolerance threshold and action Determination of the need for treatment Type of action Choice of product Timing, frequency or number of treatments
• Apply the treatment.	Techniques for using equipment: spreaders, sprayers Personal and environmental protective equipment Calculation of quantity and dose Mixture, if applicable Calibration of equipment Product application
11. Fill out a maintenance chart.	
• Identify the elements that must appear on a maintenance chart.	Elements included on a maintenance chart Importance of following up and entering data on the chart Logical sequence of maintenance operations, in accordance with the seasons and an integrated pest management strategy

Sales Areas	Code: 705333

Competency 22 Duration 45 hours Credits 3

Behavioural Objective

Statement of the Competency	**Achievement Context**
Organize sales and storage areas.	• In a garden centre or a horticultural exhibition site • Based on themes or various categories of horticultural products to display, or a specific request from a manager • Using living or inert horticultural products; shelves and sales counters; the necessary tools and equipment; personal protective equipment; reference documents, books, suppliers catalogues, price lists, purchase orders, receipt slips, labels, signs, etc.; a computer with an Internet connection
Elements of the Competency	**Performance Criteria**
1. Order merchandise.	• Appropriate choice of supplier • Clear, accurate verbal communication with the supplier • Clear, accurate information communicated
2. Receive merchandise: - inert products - living products	• Thorough verification that merchandise received conforms with the order • Accurate identification of discrepancies • Careful handling of the merchandise • Appropriate inspection of the quality of the merchandise • Appropriate negotiation of returns, if applicable • Proper preparation of the merchandise
3. Gather information on the characteristics of different products and services.	• Relevant choice of sources of information • Proper use of search tools • Inclusion of all information needed to give a detailed presentation on a product or service
4. Set up product displays.	• Attractive, original presentation • Logical classification of products by category and subcategory • Correct emphasis placed on the products or services to promote • Observance of basic marketing rules • Proper use of complementary products • Compliance with the theme

5. Organize the storage area.	• Ease of access • Safe layout of the space • Logical, functional organization
6. Perform operations related to signage and labelling.	• Complete, accurate labelling of all products • Strategic placement of posters/signs, counter cards and labels • Relevant information on posters/signs, counter cards and labels • Attractive signs • Compliance with rules governing signage
7. Follow up on merchandise maintenance.	• Effective time management • Correct product rotation • Application of display principles when restocking shelves • Proper tidying and cleaning of premises • Appropriate replacement of damaged bags or packaging • Correct application of plant maintenance techniques • Systematic verification of the condition of labels and replacement, if necessary
8. Inventory merchandise.	• Use of appropriate inventory methods • Accurate calculations • Complete inventory • Clarity of written information • Proper compilation of data
	For the competency as a whole: • Effective time management • Rapid execution • Attention to detail and accuracy (total quality) • Pleasant, courteous attitude during promotional activities • Demonstration of professional ethics • Cooperation and respect for teammates • Respect for the living materials used • Compliance with occupational health and safety rules

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Order merchandise.

• Determine the products to order.	Consultation of the inventory Qualification of products to order: types of products and formats Quantity and price
• Choose the supplier.	Consultation of the list of potential suppliers Verification of the product's availability, delivery time, price and purchase conditions, overall quality, etc. Criteria for selecting suppliers
• Prepare different types of purchase orders.	Sections and relevant information to include, based on the type of product ordered Types of documents: list of products or services, inventory forms, purchase orders Company rules concerning orders
• Order merchandise.	Preparation and forwarding of purchase orders

2. Receive merchandise.

• Become familiar with the initial order.	Purchase order Types of products, format, quantities and quality
• Verify the order.	Use of forms for receiving deliveries Precautions when handling merchandise deliveries Conformity of the delivery with the initial order Identification of discrepancies, if applicable Justification for merchandise returns Negotiation of returns
• Classify the merchandise received.	Unloading and handling techniques, based on the product Quarantine for certain plants Preparation of merchandise based on the type of product: unwrapping, pruning, cleaning, watering, fertilization, labelling, sorting, storing, etc. Warehousing procedure and storage methods

3. Gather information on the characteristics of different products and services.

• Determine the information to look for.	Depending on the type of product and the information needed to advise customers

• Look for information about a product.	Conventional and electronic sources of information Use of search tools Filing and selection of information to be kept in order to create signs in the future
4. Set up product displays.	
• Recognize the importance of aesthetics and marketing in displaying products	Highlighting of products Purpose of the organization, structure, cleanliness and quality of the products and displays in marketing strategies
• Refer to rules for displaying horticultural products.	Logical organization: type of product and format Buyer psychology Use of music and lighting Colours, lines, arrangement and ambiance Ratios and proportions: balance Cleanliness Laws governing the display of pest control products
• Distinguish the types of displays in garden centres.	Purposes of displays Marketing rules Possible display themes, according to different sections in a garden centre
• Plan a typical garden centre display.	Determination of the theme and type of product Type and kind of display Organization and layout of products to display
• Set up product displays.	Procedures for preparing merchandise: methods of emphasizing products
5. Organize the storage area.	
• Organize the space.	Proximity to display areas Logical, functional organization Access Safety
6. Perform operations related to signage and labelling.	
• Understand the principles related to signage and labelling in garden centres.	Purpose of signs and labels Types of signs and labels and type of information to communicate Rules governing labelling and signage: uniformity, visibility, placement and positioning, attractive and professional presentation, and colours Regulations
• Create labels and signs.	Information regarding the characteristics, price, sales conditions and refunds, etc., of different products and services offered Manually, using a computer

• Apply the regulations pertaining to signage.	Current legislation
• Label products and install signs.	Use of different types of labelling equipment
7. Follow up on merchandise maintenance.	
• Note the tasks to be performed in order to maintain and follow up on merchandise in the garden centre.	Inspection of different departments of the garden centre and identification of the work to be done Product rotation Restocking of shelves, tables, outdoor areas and displays Cleaning Replacement of damaged bags and packaging, used labels, unattractive, dead or diseased plants Watering, fertilization, repotting, detection of pests and pest control treatments
• Work independently.	Importance of being able to work independently within a team for coworkers, customers and employers Time management, resourcefulness and efficiency
• Perform tasks related to merchandise maintenance in a garden centre.	Inspection of premises, buildings, surfaces and furniture Inspection of merchandise: inert and living
8. Inventory merchandise.	
• Recognize the importance of inventory taking.	Monitoring of merchandise turnover Continual product availability (as far as is possible) Information on products that need to be ordered Deduction of stolen merchandise, if the figures don't balance Preparation of orders based on inventory Importance of calculations, clarity of written information and compilation of all data
• Identify information generally included on inventory stock cards.	Recording of information
• Apply different inventory techniques.	Principles and methodology Use of catalogues and interpretation of various horticultural product codes Counting, calculations and compilation of data Use of automatic, magnetic and computer equipment Manual or electronic data entry, according to the practices of garden centres in the region Communication of the information compiled to the immediate superior

Selling Products	Code: 705342

Competency 23 Duration 30 hours Credits 2

Behavioural Objective

Statement of the Competency	**Achievement Context**
Sell horticultural products and equipment.	• In a garden centre • Based on customer inquiries regarding horticultural products or services offered in a garden centre • Using plants and various horticultural products; a cash register; a sales terminal; a calculator; handling, packaging and shipping materials; reference documents (e.g. business directories, supplier catalogues, books)

Elements of the Competency	**Performance Criteria**
1. Greet the customer.	• Appropriate salutation • Proper timing • Observance of courtesy rules
2. Identify the customer's needs.	• Listening attentively to the customer • Clear, accurate, engaging communication • Relevant customer approach • Relevant questions asked • Accurate paraphrasing of the customer's needs
3. Advise the customer.	• Appropriate advice regarding products and services requested by the customer • Consideration of the customer's needs and preferences • Relevant sales arguments • Suggestion of several possible products or techniques for the customer's needs • Clear, relevant information
4. Handle customer objections.	• Clarification of the objection raised • Relevant alternative solutions
5. Recommend additional products and services.	• Appropriate additional products and services offered

6. Close the sale.	• Proper negotiation of sales conditions • Recognition of customer's verbal and nonverbal communication signs • Creation of a customer record • Proper invoice preparation • Inclusion of all necessary information on the invoice • Accurate information • Accurate calculation of taxes, rebates and discounts
7. Perform financial transactions related to the sale.	• Verification of materials, equipment and cash register float • Proper receipt of payment • Correct change given • Observance of procedures associated with each form of payment • Rapid execution • Compliance with the rules for closing the cash register • Correct application of security measures during cash register operations • Accurate information entered in the cash register report • Accurate transfer of information on the deposit slip • Clarity of written information
8. Prepare the merchandise for delivery.	• Correct preparation of delivery slip • Layaway of properly identified merchandise • Appropriate choice of packaging materials • Careful handling of products • Solid, safe and attractive (if applicable) packaging
9. Follow up on service.	• Appropriate follow-up of needs identified on the customer record
	For the competency as a whole:
	• Proper use of search tools • Observance of professional ethics • Observance of quality service principles • Polite, courteous, professional attitude toward the customer • Correct application of verbal and nonverbal communication techniques • Correct grammar and spelling in written documents • Respect for the living materials used

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Greet the customer.

• Recognize the importance of the salesperson's personality and attitude from the customer's point of view.	Role of the garden centre sales consultant Professional and personal qualities
• Adopt a positive, professional attitude towards different types of customer behaviour.	Interpretation of customer behaviour Connection between customer behaviour and types of communication Description and adoption of proper attitudes by the sales consultant when dealing with different types of customer behaviour Establishment of a climate of trust
• Apply different greeting techniques.	Determination of the best time to approach the customer, based on the customer's attitude Creation of a positive impression Techniques for greeting and approaching customers

2. Identify the customer's needs.

• Formulate different types of questions in order to determine customers' specific needs.	Advantages of types of questions, based on the type of response desired Ways of formulating questions Choice of questions adapted to the situation
• Apply paraphrasing techniques in order to determine a customer's needs.	Paraphrasing a customer's answers
• Use of communication techniques.	Rules governing effective communication with customers

3. Advise the customer.

• Recognize the importance of communication in the work of a garden centre sales consultant.	Importance of providing accurate information to customers Responsibilities and role with regard to customers
• Describe the products and services offered by the garden centre.	Description of products inside and outside the store Description of the different services offered
• Prepare their sales arguments or advice.	Search for information about a product or service Analysis of the information Development of a sales argument (qualities and characteristics of the product)

• Present various horticultural products.	Plants, products and inert materials Description of products and highlighting of their advantages and benefits Connections between the products suggested and the customer's initial needs
• Explain horticultural techniques in everyday terms.	Amendment and fertilization, planting, pruning, pest control, etc. Adaptation of the terms used to the customer's level of knowledge
4. Handle customer objections.	
• Determine the type of objections raised.	Definition of an objection Distinction between different categories of objections
• Formulate responses to objections.	Steps and attitudes in handling objections
5. Recommend additional products and services to customers.	
• Identify additional products and services to recommend.	Suggestion of additional products associated with potential services
• Identify the product(s) or service(s) that could complement the initial product or service.	Description of the initial product or service Identification of maintenance or other needs, in order to maintain the quality of the product or service over the long term Association of needs and additional products and services offered in the garden centre Justification of the use or need for the additional product: sales arguments Suggestion of additional products or services to the customer
• Apply sales techniques.	Suggestion selling Cross selling
6 Conclude the sale.	
• Negotiate the sales conditions.	Identification of elements that can be negotiated in a sale Principles to observe during negotiations
• Prepare the invoice.	Information to enter on a typical garden centre invoice Recording of information Calculation of taxes, rebates, discounts, delivery charges (if applicable) and total Creation of a customer record that can be used for the follow-up

7. Perform the financial transactions related to the sale.	
• Receive payment.	Verification or validation procedures specific to each method of payment Mode of operation and procedure for using a cash register, sales computer and terminal (Interac machine) Data entry Giving change, sales slips or receipts
• Identify the causes and consequences of a cash register that does not balance.	Causes Consequences
• Close the cash register at the end of the day (float).	Different end-of-day closing procedures Security measures Entry of information to close the cash register and sales terminal Verification of sales total Removal of cash, various coupons and cheques Preparation of cash register float for the next day Calculating, sorting, compiling and balancing the day's transactions Transfer of information onto the cash register report: calculation of totals and subtotals; preparation of deposit
8. Prepare merchandise for delivery.	
• Prepare the delivery slip.	Information to include on the delivery slip Importance of writing clearly and legibly
• Prepare a layaway.	Gathering of merchandise in the layaway area, in accordance with the invoice Identification of sold merchandise using labels
• Package merchandise.	Importance of packaging (particularly plants) when transporting merchandise in an open truck Desiccation and wind burn during transport of unprotected plants Distinction between different packaging techniques Packaging materials Safety standards for merchandise that does not fit in the trunk of a car
9. Follow up on service.	
• Recognize the importance of after-sales follow up.	Verification of customer satisfaction Building customer loyalty Customer prospection Use of various means of ensuring follow-up
• Distinguish between after-sales service, warranty and merchandise returns.	Concepts Policies specific to garden centres

Job Search	Code: 705351

Competency 24 Duration 15 hours Credit 1

Behavioural Objective

Statement of the Competency	**Achievement Context**
Use job search techniques.	• Based on a job advertisement in horticulture and potential jobs in the field • Using the appropriate documents
Elements of the Competency	**Performance Criteria**
1. Prepare their résumé.	• Inclusion of relevant information • Clear, clean presentation • Correct grammar and spelling
2. Write a job application letter.	• Relevant text with respect to the job • Compliance with standards regarding the format of job application letters
3. Undergo a job interview.	• Compliance with presentation rules and conventions during interviews • Relevant answers and actions
	For the competency as a whole: • Compliance with standards regarding the format of written documents • Quality of verbal and written communications

Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each element of the competency, along with their attendant guidelines.

1. Prepare their résumé.
   - Identify the qualities of an effective résumé. — Content, English, Format, etc.
   - Select the elements to include. — Education, Work experience, Aptitudes and preferences, Interests

2. Write a job application letter.

• Plan a job search strategy.	Preparing a list of newspapers and organizations useful for a job search Gathering useful information on potential employers
• Recognize the qualities of an effective letter of application.	Content English Format, etc.
• Select elements to include.	Introduction Description of the job sought References Closing

3. Undergo a job interview.

• Prepare for the job interview.	Techniques for requesting and preparing for job interviews Preparing a personal presentation Gathering information on the company
• Adopt desirable attitudes and behaviours during interviews.	Ability to listen and express themselves Arguments Courtesy Tone of voice

Entering the Workforce	Code: 705365

Competency 25 Duration 75 hours Credits 5

Situational Objective

Statement of the Competency

Enter the workforce.

Elements of the Competency

- Become familiar with the realities of the trade.
- Integrate the knowledge, skills, attitudes and habits acquired during training.
- Become aware of how a practicum will change their perception of the trade.

Learning Context

Information Phase

- Becoming familiar with information about the practicum and its terms and conditions.
- Listing the companies likely to take in trainees.
- Becoming familiar with the physical organization of the host company.

Participation Phase

- Observing the work setting: types of plants, inert materials and techniques used; internal structure of the company; working conditions; health and safety; interpersonal relations, etc.
- Integrating into a team.
- Observing or participating in different work-related tasks.
- Producing a brief report on their observations of the work setting and the tasks performed.

Synthesis Phase

- Making connections between their actions in the workplace and the knowledge acquired during training.
- Discussing the accuracy of their perception of the trade before and after the practicum: workplace, trade practices, etc.
- Discussing how their practicum will affect their career choice: aptitudes, preferences and interests.

Instructional Guidelines

- Provide students with the means to help them choose an appropriate practicum position.
- Maintain close ties between the school and the host company.
- Make it possible for students to observe and carry out various work-related tasks.
- Make sure trainees are under the constant supervision of a responsible individual in the host company.
- Ensure the regular support and supervision of students.
- Intervene if problems or difficulties arise.
- Encourage students to take part in discussions.

Participation Criteria

Information Phase

- Strive to understand how the practicum is organized and what their responsibilities are as trainees.

Participation Phase

- Comply with instructions concerning authorized activities, work schedules and other company rules.
- Comply with the occupational health and safety rules in effect in the host company.
- Participate actively in different tasks.
- Find out, on a regular basis, about the methods, techniques and work tools used.
- Strive to produce a daily report describing their observations about the tasks performed.

Synthesis Phase

- Discuss their experience in the workplace with other students.

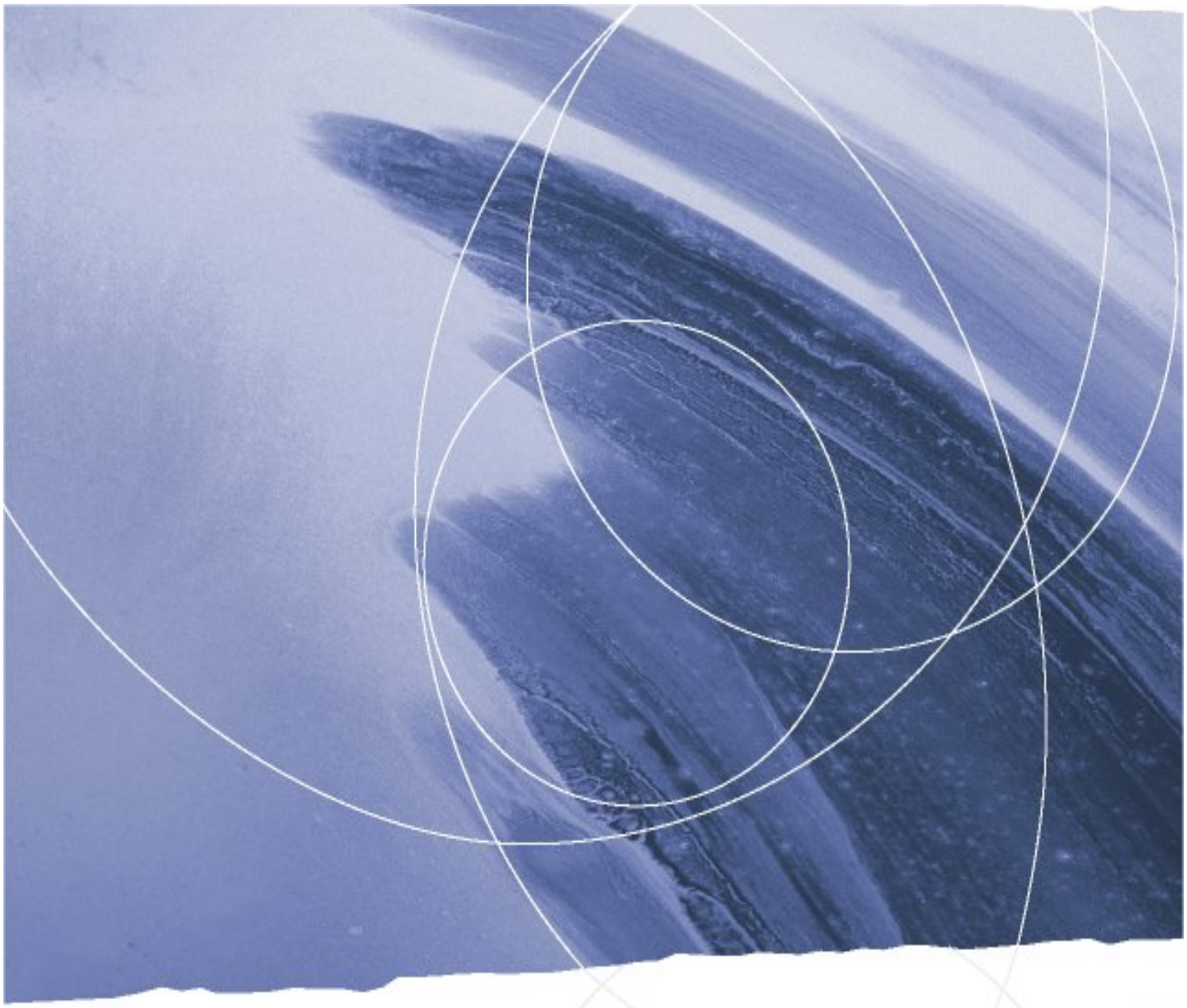
Suggestions for Competency-Related Knowledge and Know-How

The following is a summary of the knowledge, skills, strategies, attitudes and perceptions related to each phase of the learning context, along with their attendant guidelines.

Information Phase

• Situate the competency with respect to the trade and training program.	Reason for the competency Course outline Connections with the other competencies
• Become familiar with the information, terms and conditions of the practicum.	Objectives of the practicum, duration, instructional guidelines, participation criteria
• Make a list of the companies likely to take in trainees.	Determination of criteria for choosing a host company Location Type of services offered (e.g. lawn maintenance, pruning, fertilization, plant protection, design, sales consulting) Customers (e.g. professionals, amateurs, retail, wholesalers)
• Become familiar with the physical organization of the host company.	Surface area of the garden centre or size of the gardens and properties to maintain Categories of plants or raw materials produced or offered
• Undertake steps to find a practicum position.	Application of job search strategies Adaptation of their résumé to the companies targeted

Participation Phase	
• Observe the work setting.	Internal structure Equipment and machinery Types of plants, inert materials and techniques used Technological developments Working conditions Health and safety Interpersonal relations
• Integrate into a team.	Understanding the role of each team member: sharing of responsibilities Awareness of their personal role Respect for the expertise of others Positive attitudes Compliance with instructions concerning authorized activities, work schedules and other company rules
• Observe and participate in different work-related tasks.	Planting, pruning, amendment, plant fertilization, etc. Reading plans, plant protection, sales consulting, etc.
• Produce a brief report on their observations of the work setting and the tasks performed.	
Synthesis Phase	
• Make connections between their actions in the workplace and the knowledge acquired during training.	Identification of differences regarding: horticultural principles and techniques, philosophy, performance criteria, etc.
• Discuss the accuracy of their perception of the trade before and after the practicum.	Discussion about differences regarding: working conditions, tasks and operations, expected performance, etc.
• Discuss how their practicum will affect their career choice.	Aptitudes Preferences Interests



Éducation,
Loisir et Sport
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17-0211-01A