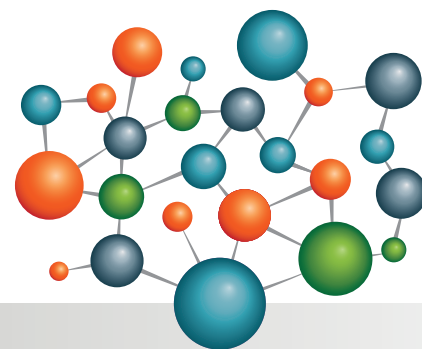


PROGRAM OF STUDY

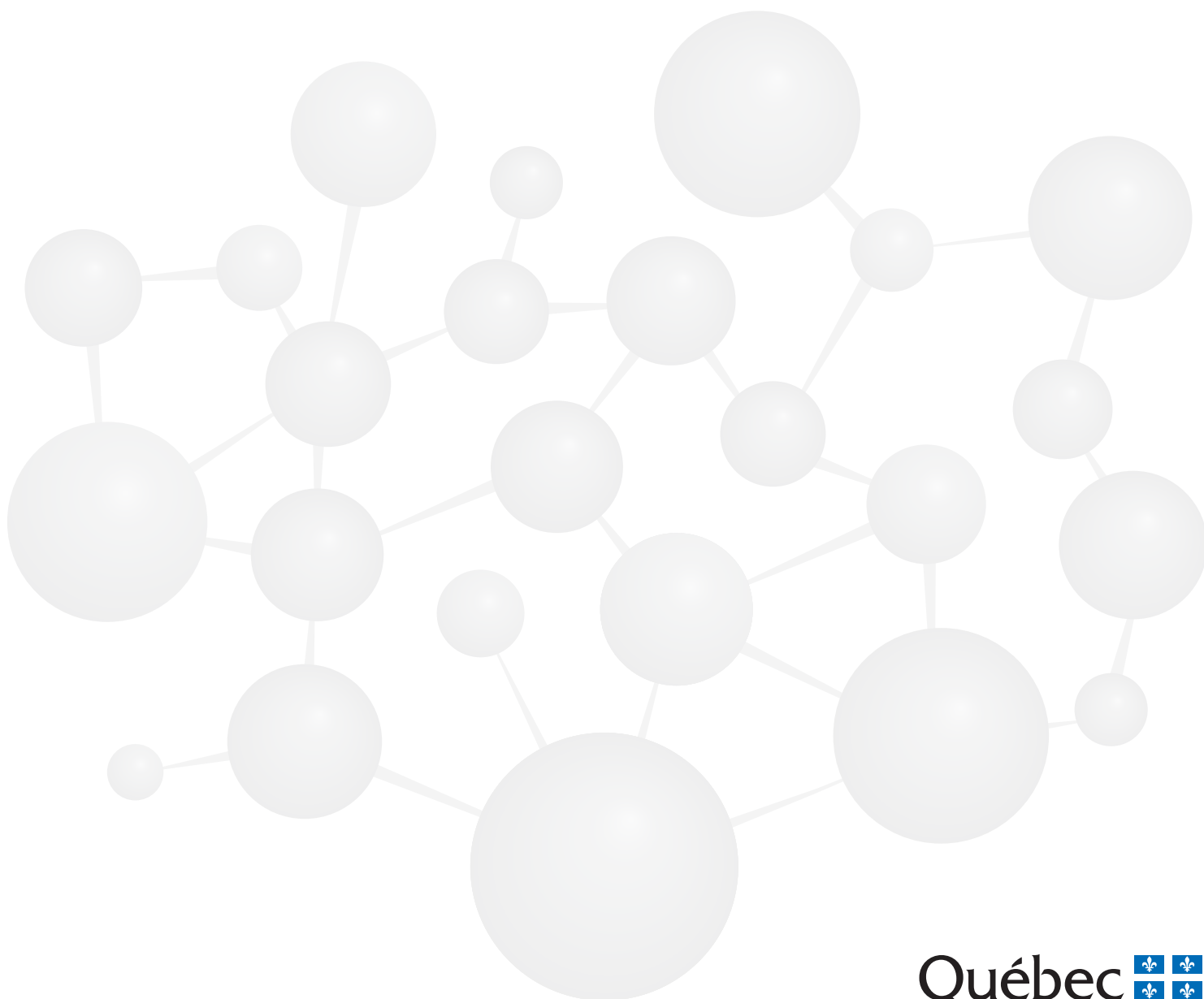
TREE PRUNING (DVS 5866)

Training sector

AGRICULTURE AND FISHERIES



MINISTÈRE DE L'ÉDUCATION ET DE L'ENSEIGNEMENT SUPÉRIEUR

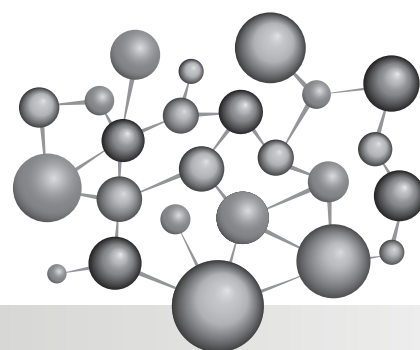


PROGRAM OF STUDY

TREE PRUNING (DVS 5866)

Training sector

AGRICULTURE AND FISHERIES



MINISTÈRE DE L'ÉDUCATION ET DE L'ENSEIGNEMENT SUPÉRIEUR



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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 *Education Act*, CQLR, c. I-13.3, s. 461.

1. Behavioural Competency

A behavioural competency describes the actions and the results expected of the student. 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* 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.

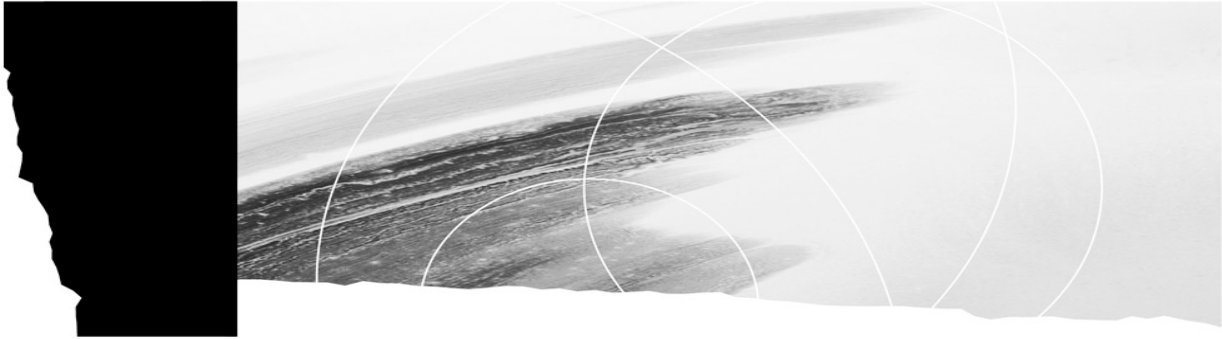
Aspects of Program Implementation

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, since 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.



5866

Tree Pruning

Year of approval: 2018

Certification:	Diploma of Vocational Studies
Number of credits:	61
Number of competencies:	17
Total duration:	915 hours

To be eligible for admission to the *Tree Pruning* 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 they begin their training must meet the following condition: they must have obtained Secondary III credits in language of instruction, second language and mathematics in programs 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 must have the following functional prerequisites: the successful completion of the general development test and ENG-3070-3 and MTH-2102-3, or recognition of equivalent learning.

OR

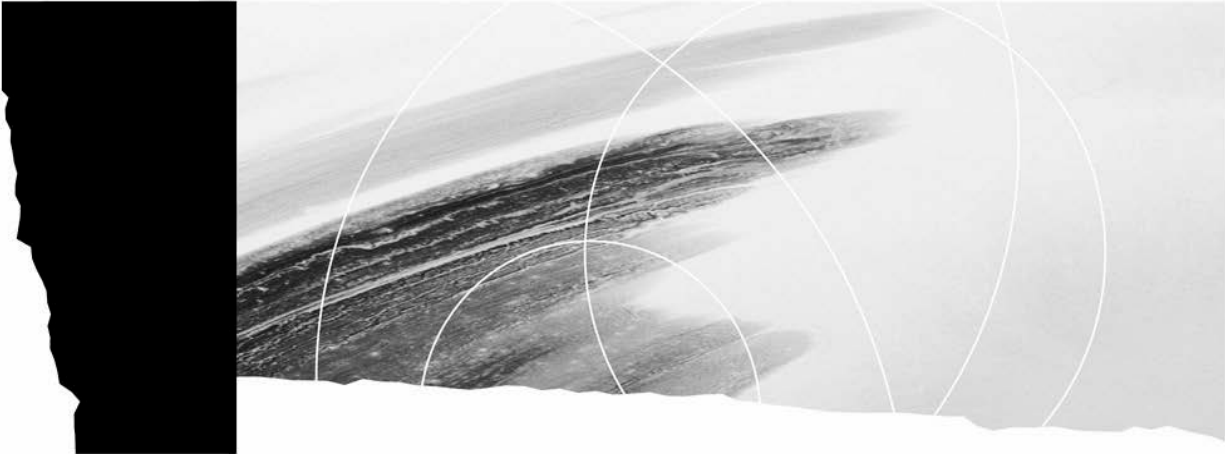
- Persons who have obtained Secondary III credits in language of instruction, second language and mathematics in programs established by the Minister are required to pursue general education courses, concurrently with their vocational training, in order to obtain the Secondary IV credits they lack in language of instruction, second language and mathematics in programs established by the Minister.

The duration of the program is 915 hours, which includes 525 hours spent on the specific competencies required to practise the trade or occupation and 390 hours on general work-related competencies. The program of study is divided into 17 competencies that vary in length from 15 hours to 120 hours. The total hours allocated to the program include time devoted to teaching, evaluation of learning and enrichment or remedial activities.

Specific features of the program

Successful completion of some or all of the program competencies may entitle the student, at his or her request, to certifications issued by recognized authorities.

Competency	Code	Number	Hours	Credits
The Trade and the Training Process	712321	1	15	1
Occupational Health and Safety	712332	2	30	2
Tree Development in an Urban Environment	712343	3	45	3
Main Characteristics of Trees in an Urban Environment	712354	4	60	4
Planting Trees	712362	5	30	2
Climbing Trees	712377	6	105	7
Use and Maintenance of Power Tools and Motorized Equipment	712384	7	60	4
Abnormalities and Mechanical Resistance of Trees	712393	8	45	3
Trimming Young Trees, Fruit Trees and Hedges	712404	9	60	4
Maintaining Semi-Mature Trees	712414	10	60	4
Load Hauling and Progress Capture System and Advanced Tree Climbing Techniques	712422	11	30	2
Consolidating Parts of a Tree by Cabling and Bracing	712433	12	45	3
Aerial Rescue	712442	13	30	2
Tree Removal	712458	14	120	8
Pruning Mature or Senescent Trees	712466	15	90	6
Introduction to Overhead Power Line Clearing	712471	16	15	1
Practicum in the Workplace	712485	17	75	5



Part I

Program Goals

Educational Aims

Statements of the Competencies

Grid of Competencies

Harmonization

Program Goals

The *Tree Pruning* program prepares students to practise the trade or occupation of tree pruner.

Tree pruners work in three areas: arboriculture, power line clearing and municipal services.

Arboricultural companies offer a wide range of maintenance services such as pruning, felling, cabling and bracing, fertilizing, planting and trimming hedges in the residential, commercial, institutional and municipal sectors.

Power line clearing contractors specialize in controlling vegetation that could hinder overhead power lines. Tree pruners specializing in this area mostly prune trees, but can be called upon to take them down as well. These contractors offer their services to producers and distributors of electricity and to telecommunications companies.

Like their colleagues in arboricultural companies, tree pruners working for municipalities perform a wide range of tasks, but are mostly called upon to prune trees.

Tree pruners use climbing and access equipment, chainsaws, pruning knives, handsaws, wood chippers, stump grinders, and so on.

The trade requires a good knowledge of trees, proficiency in several climbing and cutting techniques, a strong sense of responsibility when it comes to occupational health and safety, and the ability to adapt. It is ideal for people who like to perform a variety of technical tasks outdoors. The work is physically demanding because of the need to climb trees and work in all kinds of weather.

Over time, experienced tree pruners can take on more arboricultural responsibilities, diagnosing trees, evaluating work and managing teams, and even starting their own companies.

The program goals of the *Tree Pruning* 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 *Tree Pruning* 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:

- Promote sustainable development and respect for trees.
- Encourage the use of arboricultural terminology.
- Develop a respect for others and for personal property.
- Develop the soft skills needed to practise the trade.
- Develop an open mind with respect to the evolution of arboricultural knowledge and work methods.

Statements of the Competencies

List of Competencies

- Determine their suitability for the trade and the training process.
- Ensure occupational health and safety.
- Analyze tree development needs in an urban environment.
- Analyze the main characteristics of trees in an urban environment.
- Plant trees.
- Climb trees.
- Use and maintain power tools and motorized equipment.
- Analyze situations related to the mechanical resistance of trees.
- Trim young trees, fruit trees and hedges.
- Maintain semi-mature trees.
- Use load hauling and progress capture system techniques and advanced tree climbing techniques.
- Cable and brace trees.
- Carry out an aerial rescue.
- Fell and dismantle trees.
- Prune mature or senescent trees.
- Learn about overhead power line clearing.
- Do a practicum in the workplace.

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.

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. 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											
SPECIFIC COMPETENCIES	Competency number	Type of competency	Duration(in hours)	GENERAL COMPETENCIES							
				Determine their suitability for the trade and the training process	Ensure occupational health and safety	Analyze tree development needs in an urban environment	Analyze the main characteristics of trees in an urban environment	Climb trees	Use and maintain power tools and motorized equipment	Analyze situations related to the mechanical resistance of trees	Use load hauling and progress capture system techniques and advanced tree climbing techniques
TREE PRUNING											
Competency number				1	2	3	4	6	7	8	11
Type of competency				S	B	B	B	B	B	B	B
Duration (in hours)				15	30	45	60	105	60	45	30
											390
Plant trees	5	B	30	○	●	●	○				
Trim young trees, fruit trees and hedges	9	B	60	○	●	●	●	○	●	●	
Maintain semi-mature trees	10	B	60	○	●	●	●	●	●	●	
Cable and brace trees	12	B	45	○	●	●	●	●	○	●	○
Carry out an aerial rescue	13	B	30	○	●			●		●	●
Fell and dismantle trees	14	B	120	○	●	○	●	●	●	●	●
Prune mature or senescent trees	15	B	90	○	●	●	●	●	●	●	●
Learn about overhead power line clearing	16	S	15	●	●	○	○	○	●		○
Do a practicum in the workplace	17	S	75	●	●	○	○	○	○	○	○
Total duration			525								915

Links between the general and specific competencies

- : Existence of a relationship
- : Application of a relationship

Harmonization

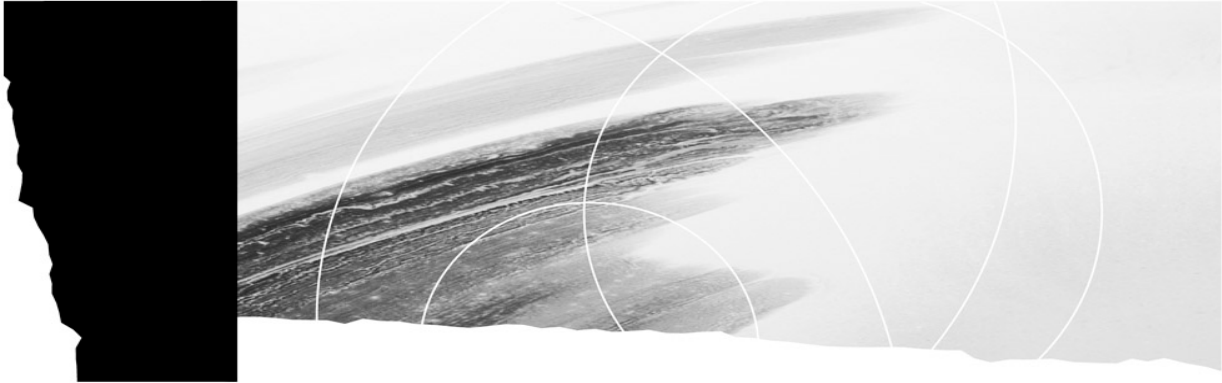
The Ministère de l'Éducation et de l'Enseignement supérieur harmonizes its vocational and technical programs by establishing similarities and continuity between secondary- and college-level programs within a particular sector or between sectors in order to avoid overlap in program offerings, to recognize 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.

The *Tree Pruning* program does not share any competencies with other programs at this time.



Part II

Program Competencies

Competency 1 Duration 15 hours Credit 1

Situational Competency

Statement of the Competency

Determine their suitability for the trade and the training process.

Elements of the Competency

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

Learning Context

Information Phase

- Learning about the job market in tree pruning services
- Learning about the nature and requirements of the trade
- Learning about the training process

Participation Phase

- Meeting with trade specialists
- Discussing the knowledge and skills required to practise the trade
- Discussing the program of study as it relates to the trade

Synthesis Phase

- Producing a report in which they:
 - describe their interests
 - assess their career choice by comparing different aspects and requirements of the trade with their interests

Instructional Guidelines

- Foster discussion among students and allow them to express themselves
- Make the appropriate documentation available
- Organize a meeting with trade specialists
- Motivate students to participate in the proposed activities
- Provide students with the means to assess their career choice objectively

Participation Criteria

Information Phase

- Gather information on most of the topics to be covered

Participation Phase

- Participate actively in the activities organized
- Express their views on the program of study
- Give their opinions on some requirements for practising the trade

Synthesis Phase

- Producing a report in which they:
 - briefly describe their interests
 - explain their career choice, clearly making the required connections

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

- Characteristics of the job market: job prospects, working conditions, hiring criteria and remuneration, arboricultural associations, opportunities for promotion, etc.
- Nature and requirements of the trade: types of tasks, responsibilities, ethics, standards and regulations, etc.
- Characteristics and requirements of the training process: program of study, evaluation, certification of studies, volume of work required, rules, student services, schedule, etc.

Participation Phase

- Participation in discussions, ability to listen, respect for each person's right to speak, ability to stick to the topic, ability to pay attention to others, openness to different points of view, etc.
- Relationships between the program competencies and the tasks, operations, knowledge and skills associated with the trade

Synthesis Phase

- Report on their strengths and weaknesses as they relate to the trade
- Justification of their career choice

Competency 2 Duration 30 hours Credits 2

Behavioural Competency

Statement of the Competency

Ensure occupational health and safety.

Achievement Context

- Given occupational health and safety standards and regulations
- Using personal and collective protective equipment
- Working with loads: branches, logs, etc.
- Given the first-aid protocol and a first-aid kit

Elements of the Competency**Performance Criteria**

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Recognize the risks related to the practice of the trade and their impact on occupational health and safety. | <ul style="list-style-type: none"> • Clear description of the risks related to the practice of the trade • Clear description of the impact of these risks on occupational health and safety • Accurate interpretation of occupational health and safety standards and regulations |
| <ol style="list-style-type: none"> 2. Take preventive measures based on the risks associated with the job. | <ul style="list-style-type: none"> • Appropriate choice of personal and collective protective equipment • Appropriate handling of loads • Proper use of methods of maintaining the level of physical fitness needed to practise the trade |
| <ol style="list-style-type: none"> 3. Administer first aid. | <ul style="list-style-type: none"> • Accurate assessment of the situation • Appropriate securing of site • Appropriate choice of intervention protocol • Quick and effective communication with emergency services and resource persons • Correct application of intervention protocol |

For the competency as a whole:

- Adoption of attitudes and behaviours adapted to the situation

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. Recognize the risks related to the practice of the trade and their impact on occupational health and safety.
 - Risks related to electricity: presence of overhead power lines, live equipment, etc.
 - Ergonomic risks: awkward posture, repetitive movements, excessive effort, etc.

- Risks related to working at a height, falling objects, collisions, flying debris, traffic, etc.
 - Risks related to the use of power tools: chainsaw, wood chipper, stump grinder, noise and vibrations, etc.
 - Biological risks: insects, poisonous plants, etc.
 - Chemical risks: hazardous materials, combustible materials, gas, smoke, etc.
 - Psychosocial risks: time constraints, interpersonal relationships, etc.
 - Consequences of risks related to electricity: electric shock, electrical hazards, electrocution
 - Consequences of ergonomic risks and risks related to the use of power tools: musculoskeletal disorders, fatigue, deterioration of hearing acuity or balance, hearing loss, hand-arm vibration syndrome, etc.
 - Risks related to working at a height, falling objects, collisions, flying debris and traffic: fractures, traumatic injuries, friction burns, sprains, etc.
 - Consequences of biological and chemical risks: allergic reactions, skin irritations, respiratory irritation, etc.
 - Consequences of psychosocial risks: fatigue, psychological stress, etc.
 - Occupational health and safety standards and regulations, employer obligations, employee obligations, introduction to tree rescue
2. Take preventive measures based on the risks associated with the job.
- Personal protective equipment: helmet, glasses, gloves, chainsaw protective pants, etc.
 - Work safety equipment: flagging tape, traffic cones, warning signs, etc.
 - Handling of branches, logs and other loads: load estimation, appropriate postures, use of tools, working in teams of two, etc.
 - Methods of maintaining the level of physical fitness needed to practise the trade: diet, stretching, warm-up exercises, etc.
3. Administer first aid.
- Choice and application of an intervention protocol in various situations: reduction in level of consciousness, cardiorespiratory arrest, convulsions, shortness of breath, chest pain, hypothermia, intoxication, obstruction of the airways, diabetes, heat-related problems, allergic reaction, eye injury, burns, frostbite, state of shock, hemorrhage, head or spinal trauma, trauma to the extremities, etc.

Competency 3 Duration 45 hours Credits 3

Behavioural Competency

Statement of the Competency

Analyze tree development needs in an urban environment.

Achievement Context

- Given a work order
- Given technical documents, data sheets on fertilizers, soil amendments and mycorrhizae

Elements of the Competency**Performance Criteria**

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Identify the role and function of the anatomical parts of a tree. 2. Estimate the stage of tree development in an urban environment. 3. Identify the elements of the ecosystem needed to ensure or foster tree development in an urban environment. 4. Give the customer information about the main effects of human intervention on tree development in an urban environment. | <ul style="list-style-type: none"> • Accurate distinction between the different anatomical parts of a tree • Establishment of relevant relationships between the anatomical parts of a tree and the main physiological phenomena • Appropriate distinction between the main growth stages of the trunk and branches • Appropriate distinction between the main tree shapes formed by their trunk and branches • Appropriate determination of the young, semi-mature, mature and senescent stages of the main types of trees • Appropriate distinction between the different water, light and temperature needs of trees • Distinction of the different types of soils and mineral elements needed to ensure or foster tree development • Appropriate determination of the consequences of poor tree development • Clear description of the impact of arboricultural interventions on tree development • Clear description of the impact of fertilizers, soil amendments and mycorrhizae on tree development • Clear description of the impact of construction work near trees on their development • Adoption of professional attitudes and behaviours |
|--|--|

For the competency as a whole:

- Use of appropriate terminology
- Appropriate use of technical documentation

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 role and function of the anatomical parts of a tree.
 - Anatomical parts of trees: trunk, branches, roots, shoots, meristem, etc.
 - Functions of the anatomical parts of trees: exchange, support, growth, etc.
 - Main physiological phenomena: respiration, photosynthesis, apical dominance, storage of energy reserves, compartmentalization, etc.
2. Estimate the stage of tree development in an urban environment.
 - Main stages in the growth of the trunk and branches over the course of a year and over the tree's lifetime: growth dynamic, axis categories (A1, A2, A3, etc.), epitonic branching, hypotonic branching, reiteration, etc.
 - Main tree growth patterns: excurrent, decurrent, monopodial, sympodial, etc.
 - Young, semi-mature, mature and senescent stages of the main types of trees: branch distribution, arrangement and density; general architecture of the tree; etc.
3. Identify the elements of the ecosystem needed to ensure or foster tree development in an urban environment.
 - Water, light and temperature needs: water volume, photoperiod, annual growing cycle, etc.
 - Types of soil and their characteristics: clayey, sandy, loamy, organic compounds, pH, etc.
 - Major mineral elements (N, P, K, etc.) and minor mineral elements (Ca, Mg, Zn, etc.)
 - Consequences of poor tree development: water stress, decline in growth rate, decrease in longevity, changes in architectural unity, dieback, disease, changes in fruit production, etc.
4. Give the customer information about the main effects of human intervention on tree development in an urban environment.
 - Main arboricultural interventions: pruning, trimming, cabling and bracing, felling, fertilizing, etc.
 - Objectives and desired effects of interventions: securing and structuring of young trees, limitation and orientation of tree growth, fruit production, etc.
 - Negative impact of interventions: injury, alteration of energy reserves, exposure to rot and wood-boring insects, etc.
 - Objectives and desired effects of the use of fertilizers, soil amendments and mycorrhizae: strength, growth, health, root volume, soil structure, etc.
 - Impact of construction work near trees: broken roots, broken bark, weakening, soil compaction, asphyxia, collar and trunk rot, etc.
 - Importance of customer service and the appropriate attitudes and behaviours

Behavioural Competency

Statement of the Competency

Analyze the main characteristics of trees in an urban environment.

Achievement Context

- Given a tree identification key and technical documentation

Elements of the Competency

Performance Criteria

- | | |
|--|---|
| 1. Observe and analyze the main parts of trees in an urban environment. | <ul style="list-style-type: none"> • Appropriate recognition of tree habit • Identification of the significant elements of colour and texture • Accurate distinction between the main characteristics of the bark, branches, shoots and leaves |
| 2. Identify the main types of trees found in an urban environment. | <ul style="list-style-type: none"> • Accurate analysis of information gathered • Accurate determination of species • Appropriate use of tree identification key |
| 3. Consult autecological information on tree species. | <ul style="list-style-type: none"> • Accurate interpretation of data concerning hardiness zones and species growth rates • Accurate interpretation of data concerning the resistance of various species • Accurate interpretation of data concerning the size of various species • Appropriate indication of the sequences of development of the main species |
| 4. Provide customers with information about the characteristics of different tree species found in an urban environment. | <ul style="list-style-type: none"> • Clear description of the importance of trees in an urban environment • Clear description of the main uses of the different species in an urban environment • Clear description of the impact of the main autecological factors on different tree species found in an urban environment • Adoption of professional attitudes and behaviours |

For the competency as a whole:

- Use of appropriate terminology
- Appropriate use of technical documentation

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. Observe and analyze the main parts of trees in an urban environment.
 - Tree crown shapes: oval, fastigate, round, types of branching, etc.
 - Bark colours: green, brown, black, yellow, etc.
 - Bark texture: hard, porous, soft, rough, etc.
 - Bark surface: cracked, smooth, scaly, furrowed, etc.
 - Shoots: hardness, flexibility, pubescence, roughness, thickness, etc.
 - Buds: size, colour, number of scales, odour, arrangement, texture, etc.
 - Leaves: arrangement, shape, blade features, size, etc.
2. Identify the main types of trees found in an urban environment.
 - Plant nomenclature: genus, species, variety
 - Classification: observation, comparison, dichotomy, etc.
 - Tree identification keys using leaves, buds, shoots, etc.
3. Consult autecological information on tree species.
 - Hardiness zones: 2b to 5a
 - Rapid, moderate and slow growth rates
 - Resistance to de-icing salt, soil compaction, insects, pathogens, maintenance practices, etc.
 - Mechanical resistance: density, flexibility, etc.
 - Size: tree height, crown spread, trunk diameter, root system characteristics, etc.
 - Sequences of development of the main species: growth habit, hierarchy, type of reiteration, etc.
4. Provide customers with information about the characteristics of different tree species found in an urban environment.
 - Importance and ecological, esthetic, economic and social functions of trees in an urban environment
 - Use of species in an urban environment based on the available space, their purpose, urban planning, etc.
 - Autecological factors: soil, pollutants, water availability, etc.
 - Importance of customer service and the appropriate attitudes and behaviours

Competency 5 Duration 30 hours Credits 2

Behavioural Competency

Statement of the Competency

Plant trees.

Achievement Context

- Working with root-balled trees, potted trees, container-grown trees or bare-root trees
- Given a work order
- Using hand digging tools
- Using mulch, stakes, and trunk and branch protection measures
- Using personal protective equipment
- Using fertilizers, soil amendments or mycorrhizae

Elements of the Competency**Performance Criteria**

- | | |
|--------------------------------|---|
| 1. Plan the work. | <ul style="list-style-type: none"> • Accurate interpretation of work order • Thorough inspection of site • Relevance of information given to the people responsible for transporting the trees to the site • Installation of the necessary security perimeter |
| 2. Prepare the tree well. | <ul style="list-style-type: none"> • Relevance of information given to the people responsible for digging • Appropriate size of planting hole |
| 3. Prepare the tree. | <ul style="list-style-type: none"> • Removal of all protection, strings and labels • Proper freeing of root system • Appropriate choice of roots and branches to be pruned • Clean and precise root and branch pruning cuts |
| 4. Place the tree in the soil. | <ul style="list-style-type: none"> • Appropriate height of root collar • Vertical position • Mycorrhizae inoculation, fertilization and soil amendment in accordance with requirements • Proper soil compaction |
| 5. Finish the planting work. | <ul style="list-style-type: none"> • Proper staking, cabling and bracing of tree • Proper installation of trunk guards • Proper shaping of water-holding basin • Application of mulch in accordance with requirements • Appropriate watering of tree |

6. Clean up.
 - Complete cleanup of work area
 - Proper maintenance and storage of equipment and tools

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- 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. Plan the work.
 - Work orders: size of trees to plant, container-grown trees, root-balled trees, potted trees, bare-root trees, location, etc.
 - Planting site: presence of underground or above-ground networks, obstacles, traffic, wind, etc.
 - Equipment for transporting trees: hand truck, derrick, etc.
 - Rules to follow to avoid injuring trees: trunk guards, handling of root system, work methods, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
2. Prepare the planting hole.
 - Main Info-Excavation data: pipes, wires, gas, etc.
 - Depth, width and shape of the hole based on the size of the tree, the type of soil, the location, etc.
3. Prepare the tree.
 - Elements to be removed: cardboard, string, geotextile, labels, etc.
 - Freeing of root system: burlap, wire, container, etc.
 - Cutting of broken or dead branches and roots in order to foster scarring
 - Sever spiralling roots in order to foster root system growth and distribution
4. Place the tree in the soil.
 - Height of collar and risk of desiccation and rot
 - Vertical position and importance of aesthetics
 - Mycorrhizae Inoculation, fertilization or amendment fostering the establishment of the root system
 - Compaction of soil fill in successive layers
5. Finish the planting work.
 - Staking of deciduous and coniferous trees: choice and position of stake(s), choice and installation of ties (height, position, tensioning, etc.)
 - Trunk guards: rodent guards or mechanical protection
 - Shaping of tree water-holding basin: height, diameter, slope, etc.
 - Mulch type and thickness

6. Clean up.

- Sweeping and raking of site, waste disposal, storage of tools
- Removal of safety cones, flagging tape, warning signs, etc.

Competency 6 Duration 105 hours Credits 7

Behavioural Competency

Statement of the Competency

Climb trees.

Achievement Context

- Working with a groundman
- Working on healthy trees
- Using access equipment: ladder, standard lanyard, moving rope system, spurs, boom truck
- Using appropriate personal protective equipment
- Given the manufacturers' maintenance procedures
- Using lubricants and replacement parts
- Using tools: wrench, pliers, screwdriver, etc.
- Using a log

Elements of the Competency**Performance Criteria**

- | | |
|--|--|
| 1. Prepare to climb the tree. | <ul style="list-style-type: none"> • Thorough inspection of site • Installation of the necessary security perimeter • Precise adjustment of harness • Proper installation of accessories |
| 2. Use a ladder. | <ul style="list-style-type: none"> • Appropriate choice of ladder • Appropriate transportation of ladder • Proper setup and installation of ladder • Safe climbing up and down the ladder |
| 3. Use standard lanyards and a moving rope system. | <ul style="list-style-type: none"> • Appropriate choice of life support anchor points on the tree and types of anchors • Proper installation of lanyards and moving rope system • Appropriate choice and execution of knots • Solid installation of anchors • Safe movement and positioning in tree |
| 4. Use spurs. | <ul style="list-style-type: none"> • Appropriate choice and adjustment of spurs • Appropriate installation of lanyard and climbing rope • Safe movement and positioning in tree using spurs |
| 5. Use a boom truck. | <ul style="list-style-type: none"> • Appropriate positioning of boom truck • Stabilization of boom truck • Appropriate use of controls • Effective movement and positioning of cabin • Compliance with start-up and shutdown procedures |

- 6. Exchange equipment.
 - Solid tying of knots
 - Safe hoisting and lowering of equipment
- 7. Maintain access equipment and make minor repairs as needed.
 - Proper application of maintenance techniques
 - Accurate detection of damage or malfunction
 - Correct replacement of worn and defective components
 - Appropriate storage of equipment
 - Accurate and thorough recording of information about the equipment in the log

For the competency as a whole:

- Appropriate inspection of access equipment
- 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. Prepare to climb the tree.
 - Site inspection: presence of overhead power lines, obstacles, traffic, wind, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
 - Risk of falling; risks related to electricity, pendulum movements, etc.
 - Classes of harnesses (ADELP) depending on the job and main characteristics of the different models
 - Inspection of harness: age, history, marking, loops, straps, comfort, etc.
 - Adjustment of harness: back, chest and positioning rings, position of plate, tightening of straps (leg straps, belts and shoulder harnesses), etc.
 - Use of shock absorbing device
 - Positioning and methods of attaching the main accessories: chainsaw, handsaw, strap rings, etc.
2. Use a ladder.
 - Choice of ladder: material, length, specifications, etc.
 - Inspection of ladder: side rails, rungs, shoes, pulley, support accessories, etc.
 - Transportation of ladder: rope attached, carried over shoulder with the front pointing toward the ground, etc.
 - Installation of ladder: incline, support on the ground and at the top, blocking devices, tie-down methods, etc.
 - Climbing up and down: three points of contact, hands free, position of body, etc.
3. Use standard lanyards and a moving rope system.
 - Choice of intermediate and primary anchor points on the tree: position, size of trunk or branch, angle of tree crotch, load, etc.
 - Choice of cambium savers: rope, strap, adjustable or non-adjustable, etc.
 - Installation of rope and steel-core lanyards on the positioning rings

- Choice of moving rope system materials: types of rope and resistance, types of connectors or carabiners, pulleys, cords, etc.
 - Inspection of standard lanyards and moving rope system: age, history, marking, rope cover, carabiner body, etc.
 - Anchoring and self-locking knots: French Prusik knot, Blake's hitch, Valdotaín tresse knot, single and double fisherman's knot, double figure-eight knot, etc.
 - Installation of anchors: in the tree crotch, in choking mode, around the trunk or branch, lever effect, etc.
 - Movement and positioning: visualization and route planning, three points of contact, managing hitches and knots on climbing line and lanyard, managing pendulum falls
4. Use spurs.
- Choice of shanks: steel, alloy, carbon, straight or twisted, height-adjustable, etc.
 - Choice of gaffs: interchangeable, long, short, etc.
 - Choice of pads: flexible, rigid, etc.
 - Inspection of spurs: gaffs, straps, pads, etc.
 - Adjustment of spurs: pad height, tensioning of straps, position of shank on leg, etc.
 - Installation of lanyard and climbing rope: angle and position of body, height of lanyard, installation methods including fall-arrest systems, etc.
 - Movement and positioning: position of body and feet, sequence of movements, management of lanyard and rope, length of strides, moving over obstacles, leaning trees, etc.
5. Use a boom truck.
- CSA standards
 - Inspection of boom truck: stabilizer, turret, basket, attachment of basket, hydraulic system, etc.
 - Positioning of boom truck based on range, obstacles, type of terrain, job, tree configuration, etc.
 - Stabilization of boom truck: type of terrain, levelness of boom truck, lowering of stabilizers, etc.
 - Movement and positioning of cabin: start-up of power take-off (PTO), controlling the boom truck from the cabin and turret, sequence of deployment of booms, trajectory of basket, etc.
6. Change equipment.
- Clove and marlin hitches
 - Hoisting and lowering of equipment using the positioning rope
7. Maintain tree-access equipment and make minor repairs as needed.
- Main damage and malfunctions: wear, poor lubrication, improper assembly of lanyard components, distortion, etc.
 - Ladder maintenance: cleaning, replacement of blocking devices, replacement of rope and pulley system, etc.
 - Maintenance and repair of standard lanyards and moving rope system: cutting out of damaged sections, replacement of heat shrinkable cable sleeve, lubrication of connectors or carabiners, etc.
 - Maintenance and repair of spurs: sharpening of gaffs, tightening of nuts and bolts, replacement of gaffs, etc.
 - Maintenance of boom trucks: lubrication and cleaning
 - Logs: points to check, defects found, dates, etc.

Competency 7 Duration 60 hours Credits 4

Behavioural Competency

Statement of the Competency

Use and maintain power tools and motorized equipment.

Achievement Context

- Using a chainsaw, a wood chipper, a stump grinder and a blower
- Given the manufacturers' maintenance procedures
- Using fluids, oils, fuels, maintenance products and replacement parts
- Using tools: wrenches, pliers, screwdrivers, files, file holders, gauges, etc.

Elements of the Competency**Performance Criteria**

- | | |
|--|--|
| 1. Prepare the work. | <ul style="list-style-type: none"> • Thorough inspection of site • Installation of the necessary security perimeter • Appropriate inspection of mechanical and cutting systems and safety devices • Accurate determination of the condition of the power tools and motorized equipment • Preparation and filling of fluid, oil and fuel tanks in accordance with requirements |
| 2. Apply trimming, limbing and bucking techniques. | <ul style="list-style-type: none"> • Organized and precise execution of cuts • Appropriate identification of tension and compression zones • Precise pruning cuts in compliance with techniques • Appropriate use of chainsaw controls • Appropriate work posture |
| 3. Chip branches and tree trunks. | <ul style="list-style-type: none"> • Appropriate positioning of wood chipper • Appropriate use of the wood chipper's clutch and controls • Appropriate procedure for feeding the wood chipper • Strict application of procedures for removing obstructions from the wood chipper |
| 4. Grind tree stumps. | <ul style="list-style-type: none"> • Correct movement and positioning of stump grinder • Appropriate use of stump grinder controls • Appropriate grinding of stumps • Appropriate backfilling of site |

5. Maintain the mechanical systems of tools and make minor repairs as needed.
 - Proper application of preventive maintenance techniques
 - Accurate detection of damage or malfunctions
 - Proper replacement of parts
 - Appropriate use of maintenance products
6. Maintain the cutting systems of tools.
 - Proper application of preventive maintenance techniques
 - Appropriate adjustment of chain tension
 - Precise sharpening of chainsaw cutter links
 - Precise adjustment of chainsaw depth gauges
7. Clean up.
 - Complete cleanup of work area
 - Appropriate storage of tools and equipment
 - Proper disposal of fluids, oils, fuels and parts

For the competency as a whole:

- Appropriate choice and use of mechanical tools and equipment
- Compliance with start-up and shutdown procedures
- Observance of manufacturers' recommendations
- Respect for the environment
- 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. Prepare the work.
 - Preparation of service truck and trailer
 - Site inspection: presence of underground networks, obstacles, traffic, wind, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
 - Main points to check on a chainsaw: air filter, starter, switch, chain brake, chain, chain guide, etc.
 - Main points to check on a wood chipper: hydraulic hoses, fluid levels, blades, foreign objects in the feeder wheels, emergency shutdown, guards and protectors, etc.
 - Main points to check on a stump grinder: hydraulic hoses, fluid levels, disc, blades, safety guard, etc.
2. Apply trimming, limbing and bucking techniques.
 - Main risks associated with the use of a chainsaw: flying debris, noise, kickback, lacerations, musculoskeletal disorders, etc.
 - Chainsaw controls: chain brake, throttle, choke, on/off switch
 - Use of the different parts of the chain guide: top, bottom, tip
 - Main limbing techniques: sweep method, method used for large branches, use of body as support for chainsaw

- Cross-cutting techniques: with or without a hinge, notch or bore cut
 - Tension and compression zones and risks of binding, flying debris, etc.
 - Causes and consequences of chain kickback and reactive forces, importance of making the initial cut in the compression zone, offsetting of cut lines
3. Chip branches and tree trunks.
- Main risks associated with the use of a wood chipper: flying debris, noise, being hit by branches, being dragged into the feeder, etc.
 - Positioning of wood chipper depending on obstacles, slope, proximity and orientation of branches, etc.
 - Clutch: friction point, rpms, engagement
 - Wood chipper controls: neutral, forward and reverse gears on drive rollers; lateral movement of drive rollers; emergency shutdown; etc.
 - Wood chipper power supply: positioned next to the machine, identification of dangerous or incompatible objects, insertion of large end of branch first, use of branches as push sticks, etc.
 - Procedures for removing obstructions from the wood chipper: placing the machine in neutral, shutting down the engine, removing the key, waiting for the drive shaft to stop moving, etc.
4. Grind tree stumps.
- Main risks related to the use of a stump grinder: flying debris, noise, rollover, etc.
 - Positioning of stump grinder depending on obstacles, slope, centre of stump, etc.
 - Stump grinder controls: hydraulic oil flow, disc movements (left, right, up, down), moving the stump grinder, etc.
 - Required depth and backfill
5. Maintain the mechanical systems of tools and make minor repairs as needed.
- Manufacturer's specifications for daily, weekly, monthly and annual maintenance
 - Maintenance and repair of wood chipper and stump grinder: cleaning, lubrication, oil change, tightening of nuts and bolts, replacement of belts, adjustment of belt tension, replacement of air filter, etc.
 - Maintenance and repair of chainsaw: cleaning, replacement of air filter, recoil starter, chain catcher, etc.
6. Maintain the cutting systems of tools.
- Maintenance of the wood chipper's cutting system: cleaning and lubrication
 - Maintenance of the stump grinder's cutting system: cleaning, replacement and adjustment of teeth, lubrication of disc bearings, tightening of nuts and bolts, etc.
 - Maintenance of the chainsaw's cutting system and sharpening tools: manufacturer's specifications, cleaning and lubrication of chain guide, adjustment of tension, cleaning of base of cutter links, filing of depth gauges with a calibrated gauge, use of file holder, sharpening of cutter links
7. Clean up.
- Cleanup of site: sweeping, raking, blowing
 - Removal of safety cones, flagging tape, warning signs, etc.
 - Cleanup of shop: waste disposal, storage of tools, etc.
 - Environmental requirements concerning the disposal of fluids, oils, fuel and used parts

Competency 8 Duration 45 hours Credits 3

Behavioural Competency**Statement of the Competency**

Analyze situations related to the mechanical resistance of trees.

Achievement Context

- Using technical documentation
- Using tools: pruning knife, chisel, mallet, etc.

Elements of the Competency**Performance Criteria**

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Observe tree abnormalities. 2. Assess the risk posed by the tree. 3. Repair wounds. | <ul style="list-style-type: none"> • Appropriate detection of the presence of biotic and abiotic agents • Appropriate identification of anthropogenic elements • Accurate analysis of information gathered • Correct determination of the seriousness of the defects • Acceptable assessment of the impact of biotic and abiotic agents and anthropogenic elements on the tree • Realistic assessment of the risk of failure of branches or trunks • Appropriate choice of wounds to repair • Appropriate choice and use of tools • Precise cutting around the wound |
|--|---|

For the competency as a whole:

- Appropriate use of technical documentation

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. Observe tree abnormalities.
 - Observation of symptoms: dead branches, cracks, hangers, decay, decline, mechanical injuries, poor architecture, remoulded or disturbed soil, recent construction, etc.
 - Biotic agents: main insects (biting, sucking, boring and defoliator insects) and associated hosts, fungi, etc.
 - Abiotic agents: freezing rain, wind, snow, heat waves, etc.
 - Anthropogenic elements: plough, mechanical shovel, grass trimmer, etc.

2. Assess the risk posed by the tree.

- Determination of the seriousness of the defects and application of criteria such as number of defects, superficial defects, aggravating factors, level of damage, rate of progression, reversibility, etc.
- Assessment of the impact of biotic and abiotic agents and anthropogenic factors on the tree's vitality and stability within the limits of the tree pruner's responsibilities
- Assessment of the risk of failure of the trunk or branches with respect to the stability of the tree and its suitability for climbing

3. Repair wounds.

- Types of wounds requiring repair: size of wound, tear, damaged bark, etc.
- Cutting around the wound: removal of bark detached from the cambium, cut with rounded edges with sharper angles at the top and bottom edges of the wound

Competency 9 Duration 60 hours Credits 4

Behavioural Competency

Statement of the Competency

Trim young trees, fruit trees and hedges.

Achievement Context

- Given a work order
- Using a step ladder
- Using hand cutting tools, a hedge trimmer and power tools
- Using sharpening and maintenance tools

Elements of the Competency**Performance Criteria**

- | | |
|--|---|
| 1. Plan the work. | <ul style="list-style-type: none"> • Accurate interpretation of work order and the arboricultural intervention required • Thorough inspection of site • Correct identification of the trees and hedges to be trimmed • Appropriate inspection of hand cutting tools and hedge trimmer • Installation of the necessary security perimeter |
| 2. Set up the step ladder. | <ul style="list-style-type: none"> • Appropriate choice of step ladder • Correct setup and positioning of step ladder |
| 3. Perform maintenance pruning on young trees. | <ul style="list-style-type: none"> • Correct choice of branches to prune • Appropriate choice and execution of cutting techniques • Observance of requirements for pruning young trees |
| 4. Perform maintenance pruning on fruit trees. | <ul style="list-style-type: none"> • Correct choice of branches to be pruned • Appropriate choice and execution of cutting techniques • Observance of requirements for pruning fruit trees |
| 5. Trim hedges. | <ul style="list-style-type: none"> • Appropriate shape and aesthetic look • Observance of requirements for trimming hedges |
| 6. Clean up. | <ul style="list-style-type: none"> • Complete cleanup of work area • Relevance and accuracy of information given to the customer • Proper maintenance of tools and equipment |

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- Appropriate choice and use of cutting tools
- Effective teamwork
- 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. Plan the work.
 - Work orders and types of maintenance trims
 - Site inspection: presence of overhead power lines, structures, outbuildings, traffic, wind, etc.
 - Identification of trees and hedges (see Competency 4)
 - Main fruit trees found in Québec: apple trees, plum trees, pear trees, etc.
 - Types of hedges trimmed by tree pruners: white cedar, etc.
 - Equipment used to trim young trees, fruit trees and hedges: pruning shears, handsaw, pruning knife, hedge trimmer, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
2. Set up the step ladder.
 - Types of step ladders: conventional, tripod
 - Choice of step ladder based on height and characteristics of the terrain
 - Manufacturer's specifications and safety rules
3. Perform maintenance pruning on young trees.
 - Choice of branches to be cut based on architecture, stage of development and abnormalities: distribution of branches, removal of weakly-attached branches and encouragement of apical dominance
 - Techniques for cutting near buds, small branches and large branches; directional cutting; etc.
 - Use of pruning shears, pole pruner and handsaw
 - Pruning requirements for young trees: cuts depending on the branch bark ridge and collar, absence of adjacent tears or injuries, sap-drawer, etc.
4. Perform maintenance pruning on fruit trees.
 - Choice of branches to prune depending on the job: annual maintenance, fructification and types of fruits, restructuring, etc.
 - Pruning techniques, use of tools, requirements (see above)
5. Trim hedges.
 - Trimming and shearing
 - Use of hedge trimmer: safety rules, length of boom, position of blade or handle, etc.
 - Cutting and preservation of annual growth
 - Shape of hedge: rounded, conical, etc.

6. Clean up.

- Cleanup of work area: chipping, raking, blowing or sweeping, waste disposal, etc.
- Removal of safety cones, flagging tape, warning signs, etc.
- Information to be given to the customer: choice of branches cut, choice of hedge shape, use of fertilizer, etc.
- Maintenance of hand cutting tools: sharpening of blade, repair of nicks, adjustment of anvil blade, disinfection, etc.
- Maintenance of hedge trimmer: tightening and sharpening of blades, lubrication, etc.

Competency 10 Duration 60 hours Credits 4

Behavioural Competency

Statement of the Competency

Maintain semi-mature trees.

Achievement Context

- Working with a groundman
- Given a work order
- Using hand cutting tools and power tools
- Using sharpening and maintenance tools
- Using access equipment and personal and work safety equipment
- Using fertilizers, soil amendments or mycorrhizae

Elements of the Competency**Performance Criteria**

- | | |
|---------------------|---|
| 1. Plan the work. | <ul style="list-style-type: none"> • Accurate interpretation of work order and the arboricultural intervention required • Thorough inspection of site • Appropriate assessment of the development stage of the trees • Correct identification of trees to be treated • Correct assessment of the risks posed by the trees to be maintained • Installation of the necessary security perimeter |
| 2. Access the tree. | <ul style="list-style-type: none"> • Proper determination of access method • Appropriate inspection of tree access equipment • Effective use of access method |
| 3. Prune the tree. | <ul style="list-style-type: none"> • Correct choice of branches to be pruned • Appropriate choice and execution of cutting techniques • Observance of pruning requirements |
| 4. Treat the tree. | <ul style="list-style-type: none"> • Proper wound repair • Inoculation, fertilization or soil amendment in accordance with requirements |
| 5. Clean up. | <ul style="list-style-type: none"> • Complete cleanup of work area • Relevance and accuracy of information given to the customer • Proper maintenance of tools and equipment |

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- Safe and effective climbing movements
- Appropriate management of work site
- Effective teamwork
- 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. Plan the work.

- Work orders and main trimming requirements for semi-mature trees: full maintenance, safety, protection of surrounding structures, thinning, training, etc.
- Site inspection: presence of overhead power lines, structures, outbuildings, traffic, wind, etc.
- Assessment of development stage of semi-mature trees (see Competency 3)
- Identification of trees (see Competency 4)
- Assessment of the risks posed by the trees to be maintained (see Competency 8)
- Equipment for trimming semi-mature trees: handsaw, pruning shears, chainsaw, pole pruner
- Installation of safety cones, flagging tape, and warning signs depending on the work area

2. Access the tree.

- Criteria for selecting the access method to be used: position of tree in its environment, size of tree, type of trimming, shape of tree, etc.
- Inspection of access equipment (see Competency 6)
- Further application of selected access method

3. Prune the tree.

- Choice of branches to be pruned based on distance away from structures, species, habit, appearance (scaffold branches, hypotonic or epitonic branching, etc.), etc.
- Cutting techniques (snap cutting, quick cutting, three-step cutting, directional notching, etc.) depending on the size and position of the branch and any obstacles in the way
- Use of pruning shears, pole pruner and handsaw
- Site management by the groundman: organization and arrangement of tools and equipment, climber assistance, site safety, clearance of obstacles, etc.
- Trimming requirements: cuts depending on the branch edge and collar, absence of adjacent tears or injuries, sap-drawer, etc.

4. Treat the tree.

- Repair of wounds (see Competency 8)
- Calculation of the amounts of fertilizer, soil amendments or mycorrhizae to apply based on the work order and the size of the tree
- Injection in the trunk, injection in the soil, vertical mulching

5. Clean up.

- Cleanup of work area: chipping, raking, blowing or sweeping, waste disposal, etc.
- Removal of safety cones, flagging tape, warning signs, etc.
- Information to be given to the customer: choice of branches cut, tree's condition and resistance, etc.
- Maintenance of chainsaw and wood chipper (see Competency 7)
- Maintenance of hand cutting tools: sharpening of blade, repair of nicks, adjustment of anvil blade, disinfection, etc.

Competency 11 Duration 30 hours Credits 2

Behavioural Competency

Statement of the Competency

Use load hauling and progress capture system techniques and advanced tree climbing techniques.

Achievement Context

- Working with a groundman
- Working on healthy trees
- Using specialized lanyards, stationary rope systems, load hauling and progress capture system devices, and personal and work safety equipment
- Given the manufacturers' maintenance procedures
- Using maintenance tools and lubricants
- Using a log

Elements of the Competency

Performance Criteria

- | | |
|--|--|
| 1. Prepare to climb the tree. | <ul style="list-style-type: none"> • Thorough inspection of site • Installation of the necessary security perimeter • Precise adjustment of harness and specialized accessories |
| 2. Use a load hauling and progress capture system. | <ul style="list-style-type: none"> • Appropriate choice of equipment • Proper installation of load hauling and progress capture system devices • Appropriate use of load hauling and progress capture system |
| 3. Use specialized lanyards and a stationary rope system. | <ul style="list-style-type: none"> • Appropriate choice of anchor points on the tree and types of anchors • Proper choice and installation of lanyards and stationary rope system equipment • Appropriate choice and execution of knots • Precise throwing of throw bag • Solid installation of anchors • Safe movement and positioning in tree |
| 4. Maintain load hauling and progress capture system devices and tree access equipment and make minor repairs as needed. | <ul style="list-style-type: none"> • Proper application of maintenance procedures • Accurate detection of damage or malfunction and their causes • Correct replacement of worn or defective components • Appropriate storage of load hauling and progress capture system devices and equipment • Accurate and thorough recording of equipment information in the register |

For the competency as a whole:

- Appropriate inspection of access equipment
- 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. Prepare to climb the tree.
 - Site inspection: presence of overhead power lines, obstacles, traffic, wind, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
 - Risk of falling; risks related to electricity, pendulum movements, etc.
 - Classes of harnesses (ADELP) depending on the job and main characteristics of the different models
 - Inspection of harness: age, history, marking, loops, webbing and leg straps, comfort, etc.
 - Adjustment of harness and specialized accessories: back, chest and fall-arrest rings, position of saddle bridge, tightening of straps (leg straps, belts and shoulder harnesses), etc.
2. Use a load hauling and progress capture system.
 - Choice of load hauling and progress capture system equipment: connectors or carabiners, pulleys, ropes, hitch cords, ascenders, rope grabs, etc.
 - Installation of devices and positioning of friction points, friction knots, pulleys, etc.
 - Use of system: tensioning, management of friction knots, pulleys, Tyrolean traverse, etc.
3. Use specialized lanyards and a stationary rope system.
 - Choice of redirects and main anchor points on the tree: position, size of trunk or branch, angle of tree crotch, load, etc.
 - Choice of anchors: rope, strap, adjustable or non-adjustable, etc.
 - Choice and installation of lanyards in a suspension or fall arrest configuration, types of adjustments, length, etc.
 - Choice of stationary rope system equipment: types of ropes and strength, friction management devices, types of connectors and carabiners, ascenders, pulleys, friction hitches, etc.
 - Inspection of specialized lanyards and stationary rope system: age, history, marking, rope cover, carabiner body, etc.
 - Anchoring and termination knots, friction hitches: butterfly knot, directional figure-eight knot, double fisherman's knot, Distel hitch, etc.
 - Installation of anchors: canopy or basal anchors, lever effect on wood fibres, etc.
 - Throw bag: throwing techniques, constraints and obstacles, installation of access line rope, etc.
 - Moving and positioning using specialized lanyards and a stationary rope system: route visualization and planning, use of foot ascenders and friction management devices, etc.
4. Maintain load hauling and progress capture system devices and access equipment and make minor repairs as needed.
 - Maintenance and repair of load hauling and progress capture system devices, specialized lanyards and a stationary rope system: cutting out of damaged sections, replacement of heat shrink sleeve, lubrication of ascender and connectors or carabiners, etc.
 - Logs: checkpoints, defects found, dates, etc.

Competency 12 Duration 45 hours Credits 3

Behavioural Competency

Statement of the Competency

Cable and brace trees.

Achievement Context

- Working with a groundman
- Given a work order
- Using tools and cabling and bracing equipment
- Using tree access equipment and personal protective equipment

Elements of the Competency**Performance Criteria**

- | | |
|---|---|
| 1. Plan the work. | <ul style="list-style-type: none"> • Accurate interpretation of work order and the arboricultural intervention required • Thorough inspection of site • Appropriate assessment of the development stage of the trees • Correct identification of trees to be cabled and braced • Correct assessment of the risks posed by the trees to be cabled or braced • Determination of the number and position of cables or braces depending on the type of support required • Installation of the necessary security perimeter |
| 2. Access the tree. | <ul style="list-style-type: none"> • Proper determination of tree access method • Appropriate inspection of tree access equipment • Effective use of tree access method |
| 3. Install rigid braces. | <ul style="list-style-type: none"> • Appropriate size of rigid braces • Appropriate fastening of rigid braces • Proper tightening of rigid braces |
| 4. Install stationary and moving cabling systems. | <ul style="list-style-type: none"> • Appropriate choice of material • Appropriate fastening of cabling systems • Appropriate tensioning of cabling systems |
| 5. Clean up. | <ul style="list-style-type: none"> • Complete cleanup of work area • Relevance and accuracy of information given to the customer |

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- Safe and effective movements

- Effective teamwork
- Observance of cabling and bracing requirements
- 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. Plan the work.
 - Work orders, types of cables or braces depending on prevention objectives (moving or stationary cabling, bracing)
 - Site inspection: presence of overhead power lines, structures, outbuildings, traffic, wind, etc.
 - Assessment of development stage of trees (see Competency 3)
 - Identification of trees (see Competency 4)
 - Assessment of the risks posed by the trees to be supported (see Competency 8)
 - Tools: knife, chisel, torch, drill, wrenches, marlin spike, hacksaw
 - Determination of number and positioning of support systems: configuration of trunk, two-thirds rule (height) or 20-to-1 rule (diameter), target and risks, mass to be supported, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
2. Access the tree.
 - Criteria for selecting the tree access method to use: position of tree in its environment, size of tree, position of cables and braces, shape of tree, etc.
 - Inspection of access equipment (see competencies 6 and 11)
 - Further application of selected access method
3. Install rigid bracing.
 - Size of bracing materials based on requirements
 - Fastening and tightening: drilling, insertion of pin and tightening of nuts
4. Install stationary and moving cabling systems.
 - Choice of equipment: synthetic rope, hollow webbing, adhesive tape, steel cable, cable clamp, etc.
 - Fastening: anchor points, choice of support or drilling point, splice, installation of clamp, etc.
 - Tension to be applied based on the type and position of the cabling and bracing, the purpose of the bracing, etc.
5. Clean up.
 - Cleanup of work area: raking, sweeping, waste disposal, storage of tools, etc.
 - Removal of safety cones, flagging tape, warning signs, etc.
 - Information to be given to the customer: monitoring of tree, monitoring of bracing, etc.

Competency 13 Duration 30 hours Credits 2

Behavioural Competency

Statement of the Competency

Carry out an aerial rescue.

Achievement Context

- Given a first-aid kit
- Given the first-aid protocol
- Using tree access equipment and personal and work safety equipment

Elements of the Competency**Performance Criteria**

- | | |
|--|---|
| 1. Assess the situation. | <ul style="list-style-type: none"> • Accurate analysis of dangers and risks • Appropriate assessment of victim's condition • Correct determination of rescue method or the need to call first responders |
| 2. Access the victim. | <ul style="list-style-type: none"> • Appropriate inspection of tree access equipment • Effective use of climbing method |
| 3. Recover the victim. | <ul style="list-style-type: none"> • Method of descent based on the victim's condition and position in the tree • Safe evacuation of victim to the ground |
| 4. Stabilize the victim on the ground. | <ul style="list-style-type: none"> • Appropriate positioning of victim • Appropriate preparation of victim for transfer to first responders |
| 5. Inform the first responders. | <ul style="list-style-type: none"> • Clear and objective description of events • Clear and objective description of injuries observed and first aid administered |

For the competency as a whole:

- Appropriate choice and use of equipment
- Effective means taken to secure the victim
- Relevant public protection measures taken
- Appropriate use of first-aid kit
- Compliance with first-aid protocol
- 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. Assess the situation.
 - Dangers and risks: presence of overhead power lines, hanging branches, live power tools, structures, traffic, wind, etc.
 - Assessment of victim's condition (see Competency 2)
 - Assessment of the complexity of the situation and determination of rescue method:
 - Option to call in first responders
 - Rescue: victim's position in the tree, choice of access method and method of descent, etc.
2. Access the victim.
 - Inspection of tree access equipment and use of climbing method (see competencies 6 and 11)
3. Recover the victim.
 - Placement of victim in the vertical position, connection of rescuer to victim depending on type of descent
 - Types of descent: descent controlled from the ground, accompanied descent, lowering the victim first, etc.
 - Evacuation: management of friction hitches and climbing line, positioning of victim, etc.
 - Conditions necessary for the victim's comfort if he or she cannot be recovered (supporting victim on a branch, supporting the head, ensuring free movement of the limbs, etc.)
4. Stabilize the victim on the ground.
 - Positioning of victim based on the amount of time suspended, injuries, weather conditions, etc.
 - Preparation of victim: removal of harness and equipment, preparation of access for first responders, etc.
5. Inform the first responders.
 - Information about the event: person's name, witnesses, date, time and place of accident, damage, causes, equipment involved, etc.
 - Injuries observed and first aid administered (see Competency 2)

Competency 14 Duration 120 hours Credits 8

Behavioural Competency

Statement of the Competency

Fell and dismantle trees.

Achievement Context

- Working with a groundman
- Given a work order
- Using hand cutting tools and power tools
- Using wedges, levers, peavies, hooks and log tongs
- Using sharpening and maintenance tools
- Using access equipment and personal and work safety equipment
- Using rigging friction devices

Elements of the Competency**Performance Criteria**

- | | |
|------------------------------------|---|
| 1. Plan the work. | <ul style="list-style-type: none"> • Accurate interpretation of work order • Thorough inspection of site • Correct identification of trees to removed • Correct assessment of the risks posed by the trees to be removed • Correct determination of felling plan • Installation of the necessary security perimeter |
| 2. Access the tree. | <ul style="list-style-type: none"> • Proper determination of access method • Appropriate inspection of access equipment • Effective use of access method |
| 3. Do the required rigging. | <ul style="list-style-type: none"> • Correct choice of sections of the tree requiring rigging • Correct estimate of the weight and centre of gravity of sections requiring rigging • Correct choice of rigging techniques and friction management devices • Correct choice of anchor points • Solid tying of knots |
| 4. Dismantle the tree. | <ul style="list-style-type: none"> • Correct determination of the length of the sections • Cutting techniques and notches in accordance with dismantling techniques • Appropriate control of lowering or direction in which the branches and sections fall to the ground |
| 5. Fell a trunk or an entire tree. | <ul style="list-style-type: none"> • Proper clearing of the base of the tree and preparation of emergency exit lanes |

- Cuts and notches in accordance with felling techniques
 - Appropriate use of wedges and levers
 - Appropriate choice and use of emergency exit lanes
6. Clean up.
- Complete cleanup of work area
 - Proper maintenance of tools and equipment

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- Appropriate choice and use of trimming, limbing and bucking techniques
- Safe and efficient work positioning
- Proper use of load hauling and progress capture techniques
- Appropriate management of work site
- Effective teamwork
- Methodical work
- Compliance with current standards and regulations
- 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. Plan the work.
 - Work orders and location of the tree
 - Site inspection: presence of overhead power lines, structures, traffic, wind, etc.
 - Tree felling equipment: chainsaws, wedges, levers, peavies, handsaw, etc.
 - Identification of trees (see Competency 4)
 - Assessment of risks posed by the trees and determination of felling plan: tree abnormalities (see Competency 8), dead trees or trees with dead sections, damaged trees, trees leaning in a different direction than the desired felling direction, diameter of the stump exceeding the length of the chain guide, excessive tension and compression zones, extreme weather conditions, etc.
 - Installation of safety cones, flagging tape, and warning signs depending on the work area
2. Access the tree.
 - Criteria for selecting the access method to use: position of tree in its environment, size of tree, shape of tree, abnormalities, etc.
 - Inspection of access equipment (see competencies 6 and 11)
 - Further application of selected access method

3. Do the required rigging.
 - Criteria for selecting the sections to be rigged: obstacles, worker safety, weight, height, fall trajectory, etc.
 - Rigging techniques: tip tying, horizontal, at the foot, ridging, etc.
 - Friction management devices on the ground and in the tree: pulleys, brake systems, slings, etc.
 - Choice of anchor points: size of anchor, position of anchor based on the type of rigging and obstacles, condition of the branch, etc.
 - Clove hitches, running bowlines, cow hitches, etc.
 - Safe work positioning
4. Dismantle the tree.
 - Choice and execution of cutting techniques based on the size and position of the branch, obstacles, etc.
 - Specific characteristics of trimming, limbing and bucking techniques applied to dismantling: offset cuts, directional notches, slow or quick cutting, etc.
 - Control of lowering or fall direction of branches and sections using cutting techniques and rigging devices on the ground and in the tree
 - Site management by the groundman: organization and arrangement of tools and equipment, climber assistance, site safety, clearance of obstacles, etc.
5. Fell a trunk of a tree or an entire tree.
 - Clearing of the base of the tree and emergency exit lanes: cutting of shoots, removal of household items, etc.
 - Criteria used to choose emergency exit lanes: safe distance, use of a tree as a shield, angles of emergency exit lanes based on the felling plan, etc.
 - Types of notches: conventional, Humboldt, V, open-face
 - Types of cuts: top and bottom cuts of a notch, back cuts
 - Usefulness and importance of the hinge
 - Correction of mistakes during the notching or back-cut stages
 - Main tools: wedges, levers with or without hooks, peavies, hooks, log tongs, etc.
 - Safe work positioning
6. Clean up.
 - Cleanup of work area: chipping, raking, blowing or sweeping, waste disposal, etc.
 - Removal of safety cones, flagging tape, warning signs, etc.
 - Maintenance of chainsaw and wood chipper (see Competency 7)

Competency 15 Duration 90 hours Credits 6

Behavioural Competency

Statement of the Competency

Prune mature or senescent trees.

Achievement Context

- Working with a groundman
- Given a work order
- Using hand cutting tools and power tools
- Using sharpening and maintenance tools
- Using access equipment and personal and work safety equipment
- Using technical rigging devices

Elements of the Competency**Performance Criteria**

- | | |
|---|---|
| 1. Plan the work. | <ul style="list-style-type: none">• Accurate interpretation of work order and the arboricultural intervention required• Thorough inspection of site• Appropriate assessment of the development stage of the trees• Correct identification of trees to be pruned• Correct assessment of the risks posed by the trees to be pruned• Installation of the necessary security perimeter |
| 2. Access the tree. | <ul style="list-style-type: none">• Proper determination of access method• Appropriate inspection of access equipment• Effective use of access method |
| 3. Rig the necessary sections of the tree. | <ul style="list-style-type: none">• Correct choice of branches requiring rigging• Correct estimate of the weight and centre of gravity of branches requiring rigging• Correct choice of rigging techniques and devices• Correct choice of anchor points• Solid configuration of knots |
| 4. Prune branches with and without rigging. | <ul style="list-style-type: none">• Appropriate choice and execution of cutting techniques• Appropriate control of lowering or direction in which the branches fall to the ground• Observance of pruning requirements |
| 5. Clean up. | <ul style="list-style-type: none">• Complete cleanup of work area• Relevance and accuracy of information given to the customer• Proper maintenance of tools and equipment |

For the competency as a whole:

- Appropriate choice and use of tools and equipment
- Correct choice of branches to prune
- Safe and effective movements
- Proper use load hauling and progress capture system techniques
- Appropriate management of work site
- Effective teamwork
- 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. Plan the work.

- Work orders and main pruning requirements for mature and senescent trees: full maintenance, safety, protection of surrounding structures, thinning, training, etc.
- Site inspection: presence of overhead power lines, structures, outbuildings, traffic, wind, etc.
- Assessment of development stage of mature and senescent trees (see Competency 3)
- Identification of trees (see Competency 4)
- Assessment of the risks posed by the trees to be pruned (see Competency 8)
- Equipment for trimming mature and senescent trees: handsaw, pole pruner, chainsaw
- Installation of safety cones, flagging tape, and warning signs depending on the work area

2. Access the tree.

- Criteria for selecting the access method to use: position of tree in its environment, size of tree, shape of tree, abnormalities, etc.
- Inspection of access equipment (see competencies 6 and 11)
- Further development of selected access method

3. Rig the necessary sections of the tree.

- Criteria for selecting the sections to be rigged: obstacles, worker safety, weight, height, fall trajectory, etc.
- Rigging techniques: tip tying, butt tying, spider-balancing, etc.
- Rigging devices on the ground and in the tree: pulleys, brake systems, slings, etc.
- Choice of anchor points: size of anchor, position of anchor based on the type of rigging and obstacles, health of the branch, etc.
- Clove hitches, running bowlines, cow hitch, etc.
- Safe work positioning

4. Prune branches with and without rigging.

- Choice of branches to be pruned based on the work order: dead, diseased, dangerous, weak branches, etc.
- Cutting techniques (offset cuts, directional notches, slow or quick cutting, etc.) depending on the size and position of the branch and any obstacles in the way

- Control of lowering or fall direction of branches using cutting techniques and rigging friction devices on the ground and in the tree
- Site management by the groundman: organization and arrangement of tools and equipment, climber assistance, site safety, clearance of obstacles, etc.
- Pruning requirements: cuts depending on the branch bark ridge and collar, absence of adjacent tears or injuries, sap-drawer, etc.
- Safe work positioning

5. Clean up.

- Cleanup of work area: chipping, raking, blowing or sweeping, waste disposal, etc.
- Removal of safety cones, flagging tape, warning signs, etc.
- Information to be given to the customer: choice of branches cut, tree's condition and resistance, etc.
- Maintenance of chainsaw and wood chipper (see Competency 7)
- Maintenance of hand cutting tools: sharpening of blade, repair of nicks, adjustment of anvil blade, disinfection, etc.

Competency 16 Duration 15 hours Credit 1

Situational Competency

Statement of the Competency

Learn about overhead power line clearing.

Elements of the Competency

- Understand the reality of the job market with respect to power line clearing.
- Be familiar with the main requirements for power line clearing.
- Assess their interest in exploring this arboricultural specialty.

Learning Context

Information Phase

- Learning about the types of networks
- Learning about the types of voltage and connections and about conductors and apparatus
- Learning about the work permits to be obtained and the safety measures to be put in place
- Learning about the standards, regulations, tools, equipment and work methods associated with power line clearing
- Learning about the types of pruning involved in power line clearing

Participation Phase

- Observing pruning techniques as they apply to power line clearing

Synthesis Phase

- In a group meeting, discussing the activities observed, explaining the differences between power line clearing and arboricultural maintenance

Instructional Guidelines

- Encourage students to participate in the suggested activities
- Organize visits during which students can observe utility arborists clearing overhead power lines
- Make the relevant documentation available
- Foster discussion among students and allow them to express themselves
- Provide students with the means of developing an accurate and objective understanding of the specialty

Participation Criteria

Information Phase

- Gather information on most of the topics to be covered
- Express their views on the specific characteristics of the specialty

Participation Phase

- Follow instructions for participating in activities
- Attentively observe activities associated with power line clearing

Synthesis Phase

- Discuss with their classmates the difference between power line clearing and arboricultural tasks

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

- Types of networks: telecommunications, transmission, distribution
- Types of voltage: low, medium, high
- Conductors: low-voltage, single-phase, triple-phase
- Apparatus: transformers, disconnect switch, circuit recloser, cutout, etc.
- Safety standards, regulations and codes
- Safety measures and work arrangements: work permit, accord, self-protection and hold-off
- Tools, equipment and work methods associated with power line clearing: live-line tools, flame-resistant garments, safe limits of approach, etc.
- Types of pruning: progressive, lateral (upper, mid, lower), topping, etc.

Participation Phase

- Safety instructions for participation in activities
- Observation of the work context, the tasks performed, the application of work methods, etc.

Synthesis Phase

- Comparison of the competencies in the program of study with the tasks observed in power line clearing
- Group discussions (see Competency 1)

Competency 17 Duration 75 hours Credits 5

Situational Competency

Statement of the Competency

Do a practicum in the workplace.

Elements of the Competency

- Become familiar with the practice of the trade in a company.
- Integrate the knowledge, skills, attitudes and habits acquired during training.
- Learn about the changes in perception following time spent in the workplace.

Learning Context

Information Phase

- Learning about the terms and conditions for the practicum
- Updating their CV
- Finding companies likely to hire trainees
- Taking steps to obtain a practicum position

Participation Phase

- Observing the work context
- Carrying out or participating in various work-related tasks
- Recording their observations about the work context and the tasks performed in the workplace

Synthesis Phase

- Identifying aspects of the trade that correspond to the training received and those that do not
- Discussing the impact of their practicum experience on choosing a job: aptitudes and interests

Instructional Guidelines

- Maintain close collaboration between the school and the company
- Provide the documentation needed to prepare for the practicum
- Enable students to perform work-related tasks
- Provide students with regular support and supervision
- Make sure that students are constantly supervised by a designated person in the company
- Intervene in the case of difficulties or problems

Participation Criteria

Information Phase

- List companies that meet predetermined selection criteria
- Meet with a person in the company with a view to obtaining a practicum position

Participation Phase

- Comply with company policy
- Apply occupational health and safety rules
- Record information about the work context and the tasks performed in the company

Synthesis Phase

- Present a brief summary of their experience
- Share their experience in the workplace with their classmates

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

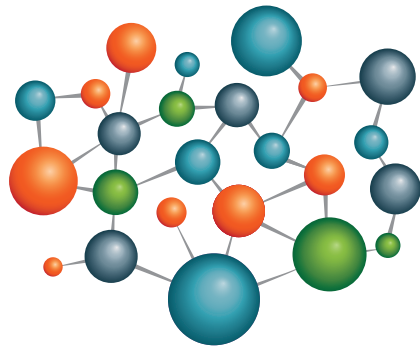
- Consultation of documentation concerning practicum positions
- Types of companies: arboriculture, power line clearing and municipal services
- Search for a practicum position, updating of CV, preparation of a cover letter
- Agreement on the terms and conditions of the practicum

Participation Phase

- Company policy: work hours, tasks assigned, tools permitted, etc.
- Occupational health and safety (see Competency 2)
- Log and significant information about the work context: tasks performed, work methods, tools, introduction to new work techniques, etc.

Synthesis Phase

- Company profile, specific situations experienced and their reactions
- Presentation of a summary of their experience in the workplace
- Group discussions (see Competency 1)



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