



Landscape Horticulturist

On-the-Job Training Guide

2022

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Recognition:

To promote transparency and consistency, portions of this document has been adapted from the 2018 Landscape Horticulturist Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at www.red-seal.ca

STRUCTURE OF THE ON-THE-JOB TRAINING GUIDE

To facilitate understanding of the occupation, this on-the-job training guide contains the following sections:

Description of the Landscape Horticulturist trade: an overview of the trade's duties and training requirements.

Essential Skills Summary: an overview of how each of the nine essential skills is applied in this trade.

Harmonization: a brief description on the pan-Canadian Harmonization Initiative for the Landscape Horticulturist trade.

Task Matrix: a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard detailing the essential skills and the level of training where the content is covered.

Major Work Activity (MWA): the largest division within the standard that is comprised of a distinct set of trade activities.

Task: distinct actions that describe the activities within a major work activity.

Sub-task: distinct actions that describe the activities within a task.

On-the-Job and In-school Training Content for the Landscape Horticulturist Trade: a chart which outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for topics of technical training.

DESCRIPTION OF THE LANDSCAPE HORTICULTURIST TRADE

Landscape Horticulturists are involved in growing, installing, maintaining and selling plants and related materials. They landscape, operate greenhouses, nurseries and garden centres, and move trees.

Landscape horticulturists survey and assess landscapes, draw sketches and interpret plans. They construct and maintain gardens, parks, golf courses and other landscape environments. In addition, landscape horticulturists construct and maintain hard landscape elements, such as patios, walkways and walls. They also prepare estimates, provide products and services, and advise clients on issues related to horticulture and landscape projects. Landscape horticulturists also propagate, cultivate and study plants, and treat injured and diseased plants. They are employed by landscape designers, architects and contractors, lawn service and tree care establishments, recreation facilities, golf courses, parks, nurseries, greenhouses, and municipal, provincial and federal governments. They may also be self employed.

Landscape horticulturists work with machinery and equipment ranging from simple hand tools to heavy equipment. They may be responsible for routine maintenance of tools and equipment. Landscape horticulturists may also work with a variety of products such as soils, pesticides, fertilizers and fuels and must be aware of their safe use, environmental best practices and government regulations.

Some landscape horticulturists specialize in areas such as landscape design, construction and maintenance, and greenhouse, sod and nursery production. They may work independently or with other professionals such as landscape architects, architects, engineers, and municipal planners.

Landscape horticulturists require good communication skills to coordinate and facilitate work with clients, co-workers and other trades. They also require strong analytical, decision making and organizational abilities.

The majority of the work such as landscape construction and maintenance, and snow and ice control is performed outdoors in all types of weather. Indoor work may involve greenhouse production, interior landscaping, and the sale of plants, landscape materials and supplies. The work may be strenuous and may involve activities such as lifting, climbing, carrying and bending. Employment in this trade may be seasonal with long hours.

With experience and proven competence, landscape horticulturists may advance to supervisory positions, training positions or become business owners.

Training Requirements: 6000 hours and 4 years, including four 8-week training sessions delivered by Olds College in Olds, Alberta. Apprentices also have the Saskatchewan option of online training using courses from the University of Saskatchewan Prairie Horticulture Certificate (PHC) program. For more information on this program see the Online Option Guide to Course Content.

Journey person to apprentice ratio for this trade is: 1:2

The information contained in this document serves as a guide for employers and apprentices. Apprenticeship training is mutually beneficial to both employer and apprentice. The employer's investment in training apprentice's results in skilled and certified workers. The document summarizes the tasks to be covered by the apprentice during their on-the-job portion of apprenticeship training. An apprentice spends approximately 85% of their apprenticeship term training on-the-job.

It is the employer's or journey person's responsibility to supervise an apprentice's practical skills development until a satisfactory level of proficiency has been reached.

EMPLOYER TRAINING RESPONSIBILITY

- introduce the apprentice to daily practice in approved safety procedures
- provide guided, hands-on practice in the operation and maintenance of tools and equipment
- demonstrate the techniques of growing, transplanting, installing and maintaining healthy, vigorous plant material.

Employers should make every effort to expose their apprentices to work experience in as many areas of the trade as possible.

In the On-the-Job Training Guide, in-school instruction is listed first; on-the-job suggestions to help employers assist the apprentice to prepare for in-school training are listed next.

The content of the training components is subject to change without notice.

Entrance Requirements for Apprenticeship Training

Your grade twelve transcript (with no modified classes) or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. In fact, employers prefer and recommend apprentices who have completed high school. This ensures the individual has all of the necessary skills required to successfully complete the apprenticeship program, and receive journey person certification.

Individuals with "modified" or "general" classes in math or science do not meet our entry requirements. These individuals are required to take an entrance assessment prescribed by the SATCC.

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or "upgraders" must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).

Note: A CLB assessment is valid for a one-year period from date of issue.

Designated Trade Name	Math Credit at the Indicated Grade Level ^❶	Science Credit at Grade Level
Landscape Horticulturist	Grade 10	Grade 10
<p>^❶ - (One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre-calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable.).</p> <p>*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.</p> <p>For information about high school curriculum, including Math and Science course names, please see: http://www.curriculum.gov.sk.ca/#</p> <p>Individuals not meeting the entrance requirements will be subject to an assessment and any required training</p>		

ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

A series of CCDA-endorsed tools have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- understand how essential skills are used in the trades;
- learn about individual essential skills strengths and areas for improvement; and
- improve essential skills and increase success in an apprenticeship program.

The tools are available online or for order at: <https://www.canada.ca/en/employment-socialdevelopment/programs/essential-skills/tools.html>.

The application of these skills may be described throughout this document within the skills and knowledge which support each sub-task of the trade. The most important essential skills for each sub-task have also been identified. The following are summaries of the requirements in each of the essential skills, taken from the essential skills profile. A link to the complete essential skills profile can be found at www.red-seal.ca.

READING

Landscape horticulturists require reading skills to review work-related documents such as site plans, work orders, contracts, purchase orders, safety documents, product directions and specifications, promotional materials and technical manuals. They may also read trade publications, catalogues, scientific articles and papers, regulations and building codes.

DOCUMENT USE

Landscape horticulturists refer to drawings, photographs, contracts, plans (grading, lighting, irrigation, planting and drainage), tables, regulations and other technical information related to their trade. They may also interpret scaled drawings of landscape designs and detail drawings, and refer to schematics and specifications for various systems. Formats of these documents may be digital or paper.

WRITING

Writing skills are used by landscape horticulturists to compose letters or e-mails to clients, contractors and colleagues, and to accurately record information such as safety, maintenance and production information. Landscape horticulturists write reports and articles covering topics such as damaged or diseased trees, shrubs, plants, turfgrass and hardscape elements.

ORAL COMMUNICATION

Oral communication is a very important skill for landscape horticulturists. A substantial amount of communication is done in order to exchange information, instruct, convey knowledge and to coordinate work with others. They talk to clients about plant care, landscape design, maintenance and practices. They speak with other professionals including suppliers, landscape architects, architects and engineers to coordinate projects.

NUMERACY

Landscape horticulturists use numeracy skills to perform calculations and measurements such as site areas, distance, volumes, product application rates and slope. They also perform calculations related to estimating production schedules, material quantity take-offs, and labour rates. They also calibrate equipment such as spreaders and sprayers. They may calculate financial transactions such as purchasing and sales.

THINKING

Decision-making and critical thinking skills are required to determine how to allocate tasks associated with activities such as plant care, environmental protection, and selection of plant species, products and practices. Planning and organizing skills are used to coordinate and organize tasks with others involved in the process. Landscape horticulturists need to comprehend, interpret and apply safety documentation and regulations. Landscape horticulturists need to be able to problem-solve when performing their work.

WORKING WITH OTHERS

Landscape horticulturists coordinate work with others, including supervisors, architects, clients, homeowners, surveyors, engineers, bylaw officers, contractors, landscape architects and other landscape horticulturists. Landscape horticulturists mentor other employees and work collaboratively.

DIGITAL TECHNOLOGY

Landscape horticulturists use computers and other digital devices when researching and documenting horticultural information. They may also use applications for communication, word processing, labeling, spreadsheets, databases and global positioning systems (GPS). They may use design, estimating, accounting and inventory software. They may use management software that incorporates electronic time sheets, real-time job data and inventory control. Digital controls may be used for irrigation and lighting systems.

CONTINUOUS LEARNING

Landscape horticulturists are required to stay up-to-date on landscaping and horticultural information and practices. They must be aware of regulatory requirements such as environmental protection and conservation, zoning and bylaws. Landscape horticulturists are governed by the regulatory bodies in the jurisdiction in which they practice. They may be required to participate in professional development through continuous education and maintain their industry-related certifications.

ELEMENTS OF HARMONIZATION FOR APPRENTICESHIP TRAINING

At the request of industry, the Harmonization Initiative was launched in 2013 to *substantively align* apprenticeship systems across Canada by making training requirements more consistent in the Red Seal trades. Harmonization aims to improve the mobility of apprentices, support an increase in their completion rates and enable employers to access a larger pool of apprentices.

As part of this work, the Canadian Council of the Directors of Apprenticeship (CCDA) identified four main harmonization priorities in consultation with industry and training stakeholders:

1. Trade name

The official Red Seal name for this trade is Landscape Horticulturist.

2. Number of Levels of Apprenticeship

The number of levels of technical training recommended for the Landscape Horticulturist trade is four.

3. Total Training Hours during Apprenticeship Training

The total hours of training, including both on-the-job and in-school training for the Landscape Horticulturist trade is 7200.

4. Consistent sequencing of training content (at each level) using the most recent Occupational Standard

Implementation for harmonization will take place progressively. Since Saskatchewan apprentices attend technical training in Alberta; Alberta was responsible to make the Harmonized changes to their curriculum.

LANDSCAPE HORTICULTURIST TASK MATRIX

This chart outlines the major work activities, tasks and sub-tasks from the 2018 Landscape Horticulturist Red Seal Occupational Standard. Each sub-task details the corresponding essential skill and level of training where the content is covered. *

* Sub Tasks with numbers in the boxes is where the content will be delivered in training. Implementation for harmonization took place progressively. Level one was to be implemented in 2017/2018, level two 2018/2019, level three 2019/2020, and level four in 2020/2021. Since Saskatchewan apprentices attend training in Alberta, Alberta was responsible to roll out the Harmonized training.

A – Performs common occupational skills

19%

A-1 Performs safety-related functions 19%	1.01 Uses personal protective equipment (PPE) and safety equipment 1 (2, 3, 4 in context)	1.02 Maintains safe work environment 1 (2, 3, 4 in context)			
A-2 Uses tools, equipment, and vehicles 27%	2.01 Uses hand tools 1, 2,3 (4 in context)	2.02 Uses power tools 1, 2,3 (4 in context)	2.03 Uses measuring equipment 1, 2,3 (4 in context)	2.04 Uses vehicles and motorized equipment, trailers, and attachment 1, 2,3 (4 in context)	
A-3 Organizes work 27%	3.01 Performs site assessments 1, 2, 3, 4	3.02 Uses documentation and reference material 1, 2, 3, 4	3.03 Maintains records 1, 2, 3, 4	A-3.04 Participates in job planning activities 3, 4	A-3.05 Orders materials 3
	A-3.06 Organizes materials and equipment 2, 3	A-3.07 Transports materials 1, 2	A-3.08 Transports equipment 1, 2		
Task A-4 Participates in marketing and sales 15%	A-4.01 Controls inventory 3	A-4.02 Sells products and services 3	A-4.03 Maintains customer relations 3	A-4.04 Prepares estimates 4	
Task A-5 Uses communication and mentoring techniques 12%	A-5.01 Uses communication techniques 1	A-5.02 Uses mentoring techniques 4			

B – Applies horticultural principles

24%

Task A-6 Removes and installs trim and hardware 62%	6.01 Identifies plants and plant requirements 1, 2, 3, 4	6.02 Manages plant health and growing conditions 1, 2	6.03 Prunes plant material 2, 3	6.04 Manages pests, diseases, and invasive species 3, 4
Task B-7 Applies environmental practices 38%	B-7.01 Practices environmental stewardship 1, 2, 3, 4	B-7.02 Practices biodiversity enhancement 4	B-7.03 Practices soil stewardship 2	B-7.04 Practices water stewardship 2, 3

C – Performs landscape construction

33%

Task C-8 Performs pre-construction activities 24%	C-8.01 Participates in landscape design activities 4	C-8.02 Prepares construction site 2	C-8.03 Performs grading 1	C-8.04 Installs drainage systems 1	
Task C-9 Installs hardscape 32%	C-9.01 Installs landscape structures 2	C-9.02 Installs surface materials 2	C-9.03 Installs steps and retaining walls 2	C-9.04 Installs irrigation systems 3	C-9.05 Installs water features 3
	C-9.06 Installs low voltage landscape lighting 3				
Task C-10 Installs softscape 28%	C-10.01 Installs growing media 2	C-10.02 Installs exterior landscape plants 2	C-10.03 Transplants plants 2	C-10.04 Installs mulch 2	C-10.05 Installs turf from seed 1
	C-10.06 Installs sod 1	C-10.07 Installs interior landscape plants 3			
Task C-11 Installs green infrastructure systems 16%	C-11.01 Selects green infrastructure 4	C-11.02 Installs green roofs and walls 4	C-11.03 Installs rainwater and stormwater management systems 4	C-11.04 Installs erosion control 4	C-11.05 Installs biodiverse plantings and natural areas 4

D – Performs landscape maintenance

24%

Task D-12 Maintains hardscape 32%	D-12.01 Maintains drainage systems 2	D-12.02 Maintains landscape structures 3	D-12.03 Maintains surface materials 2	D-12.04 Maintains steps and retaining walls 2	D-12.05 Maintains irrigation systems 3
	D-12.06 Maintains water features 3	D-12.07 Maintains landscape lighting 3	D-12.08 Practices snow and ice control 3	D-12.09 Repairs hardscape 2	
Task D-13 Maintains softscape 47%	D-13.01 Maintains exterior softscape 1, 2	D-13.02 Maintains interior softscape 3	D-13.03 Maintains turfgrass 1	D-13.04 Propagates plant material 2	D-13.05 Repairs softscape 3
Task D-14 Maintains green infrastructure 21%	D-14.01 Maintains green roofs and walls 4	D-14.02 Maintains rainwater and stormwater management systems 4	D-14.03 Maintains erosion control 4	D-14.04 Maintains biodiverse plantings and natural areas 4	

E – Works in production plant material (NOT COMMON CORE)

0%

Task E-15 Constructs growing facilities (Not Common Core)	E-15.01 Builds growing facilities (Not Common Core)	E-15.02 Installs growing facility components (Not Common Core)			
Task E-16 Operates and maintains growing facilities (Not Common Core)	E-16.01 Operates growing facility structures and amenities (Not Common Core)	E-16.02 Maintains sanitary environments (Not Common Core)	E-16.03 Operates climate control systems (Not Common Core)	E-16.04 Operates irrigation and fertigation systems (Not Common Core)	
Task E-17 Manages greenhouse crops (Not Common Core)	E-17.01 Develops greenhouse crop production plan (Not Common Core)	E-17.02 Propagates greenhouse crops (Not Common Core)	E-17.03 Transplants greenhouse crops (Not Common Core)	E-17.04 Grows greenhouse crops (Not Common Core)	E-17.05 Harvests greenhouse crops (Not Common Core)
Task E-18 Manages nursery crops (Not Common Core)	E-18.01 Develops nursery crop production plan (Not Common Core)	E-18.02 Propagates field and container crops (Not Common Core)	E-18.03 Transplants field and container crops (Not Common Core)	E-18.04 Grows field and container crops (Not Common Core)	E-18.05 Harvests field and container crops (Not Common Core)

**E-18.06 Ships field
and container crops
(Not Common Core)**

**E-18.07 Winterizes
field and container
crops
(Not Common Core)**

This Major Work Activity is not consistently performed by Landscape Horticulturists across Canada, therefore this content is deemed not common core and will not be assessed on the Landscape Horticulturist certification examination.

*The Landscape Horticulturist Red Seal Occupational Standard (RSOS), describing the “full scope” of the trade, can be found at www.red-seal.ca.

For more detailed information on course content, please refer to the Landscape Horticulturist Guide to Course Content.

ON-THE-JOB AND IN-SCHOOL TRAINING

CONTENT FOR THE LANDSCAPE

HORTICULTURIST TRADE

This chart outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for the topics of technical training. Topics of technical training are provided with the associated learning outcomes.

Level One	8 weeks	240 hours
Workplace Safety and Occupational Skills		14 hours
<ul style="list-style-type: none">• applies legislation, regulations and practices ensuring safe work.• uses industry standard practices for climbing, lifting, rigging and hoisting.• applies industry standard practices for hazardous materials and fire protection.• manage an apprenticeship to earn journeyman certification.• use communication strategies.		
Mentors can assist the apprentice to prepare for this section of technical training by:		
<ul style="list-style-type: none">• <i>identifying types of PPE and clothing and describe their applications</i>• <i>discussing safe work practices required by Occupational Health and Safety (OH&S)</i>• <i>providing WHMIS and first aid training along with company-specific safety procedures</i>• <i>explaining fire fighting equipment the procedures for extinguishing fires</i>• <i>ensuring the apprentice maintains safe work habits</i>• <i>discussing safe practices in the storage, use, handling and transport of hazardous products</i>• <i>demonstrating effective communication in customer relations and human relations on the job site</i>		
Tools, Equipment and Vehicles		34 hours
<ul style="list-style-type: none">• uses trade related tools.• use equipment.• maintains hydraulic systems.• operates heavy equipment.• operates commercial vehicles.• transports equipment• transports materials.		
Mentors can assist the apprentice to prepare for this section of technical training by:		
<ul style="list-style-type: none">• <i>explaining the safety equipment and devices required for commercial vehicles</i>• <i>demonstrating recommended maintenance practices on machinery</i>• <i>performing basic engine maintenance and operation on two and four stroke engines</i>• <i>explaining the different fluid types, system components and basic maintenance and troubleshooting</i>• <i>ensuring proper training for use and maintenance of hand / power tools and equipment</i>		

Site Assessment, Grading and Drainage

22 hours

- performs pre-construction site assessment.
- interprets utility locates.
- performs site grading.
- installs drainage systems.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying hazards and describe safe work practices pertaining to site assessment, grading, drainage and the transporting of materials*
- *describing the implications of site assessment on the practice of environmental stewardship*
- *identifying specific tools and equipment relating to site assessment, grading and drainage and describing their applications and procedures for use*
- *identifying the methods and procedures used to perform site assessment*
- *performing slope calculations for site grading and preparation*
- *identifying types of trade related documentation and describe their applications*
- *interpreting information on landscape drawings, specifications and design principles*
- *identifying types of safety records and work records*
- *explaining the importance of accurate record keeping and describe the associated procedures*
- *defining terminology associated with transporting materials*
- *interpreting documentation relevant to transporting materials*
- *describing the procedures used for transporting materials*
- *using effective listening and speaking skills*
- *identifying personal responsibilities and attitudes that contribute to on-the-job success*
- *identifying the value of diversity in the workplace*
- *identifying communication that constitutes harassment and discrimination*
- *describing the implications of grading on the practice of environmental stewardship*
- *interpreting codes and regulations pertaining to site protection, grading and drainage*
- *interpreting documentation pertaining to drainage plans, site protection, grading and drainage*
- *identifying specific tools and equipment relating to grading and describe their applications and procedures for use*
- *identifying types of drainage systems and the procedures used to install drainage systems*

Plant properties, Grassland and Parkland

74 hours

- evaluates plant health.
- uses the botanic classification system for plant identification.
- uses plants from the grassland and parkland ecosystems.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *familiarizing the apprentice with plant material by introducing characteristics used for plant classification and identification*
- *emphasizing the importance of Latin names of plant material for proper identification*
- *describing the function, value, and physical characteristics of plants for the landscape*
- *identifying the components of the plant cell and types of meristematic tissues*
- *describing the functions and growth patterns of a plant stem*
- *identifying selected aspects of leaf morphology and the function of leaves*
- *comparing the internal structure and growth characteristics of different types of root systems*
- *explaining the processes of pollination and fertilization of different flower types*
- *identifying the major internal parts, fruit types and the process of fruit development*
- *Introducing the apprentice to characteristics of parts of plants and their life cycle*
- *identifying selected interior plants by botanical, cultivar and common name*
- *discussing light, temperature, growing media and water for the landscape*

Soil and Water

60 hours

- uses environmental stewardship principles.
- manages soil health.
- manages water quality for plant health.
- uses soilless media.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *discussing soil forming factors and the characteristics of grassland, forest and urban soils*
- *describing an ideal mineral soil and how soil components influence soil properties*
- *discussing soil properties and preparation, and explaining advantages and disadvantages of soil moisture and soil types*
- *performing lab tests to determine pH, EC, SAR and carbonate levels*
- *evaluating the affects of water quality on soil and plant growth*
- *describing the biological affects of soil biological properties on plant growth*
- *familiarizing the apprentice with soil testing, and with fertilizer and other soil amendments, and by discussing advantages and disadvantages of different types of mulches*

Turfgrass and Exterior Softscape Maintenance

36 hours

- installs turfgrass.
- maintains turfgrass.
- applies fertilizer.
- performs exterior softscape maintenance.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *describing the function and techniques of turfgrass fertilisation*
- *ensuring an understanding of the growing requirements and maintenance of turf varieties (soil, water, aeration, fertilizer, mowing heights) to ensure sustainability*

Level Two

8 weeks

240 hours

Surveying and Site Assessment

32 hours

- conducts site surveys.
- prepares construction sites.
- coordinates site layout.
- maintains relationships with stakeholders.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *generating a base plan on selected specifications and landscape site*
 - *interpreting work drawings and demonstrating the process for laying out a landscape site*
 - *demonstrating intrapersonal management strategies and techniques*
 - *emphasizing the importance of effective communication strategies and techniques*
 - *describing the guidelines and principles of ethical interpersonal communication*
 - *demonstrating sentence construction, grammar. Proof-reading and editing skills in written communications*
 - *demonstrating effective communication in customer relations and human relations on the job site*
-

Conservation

24 hours

- practice environmental conservation.
- practice water conservation.
- practice soil conservation.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *explaining describe preservation, conservation and regeneration principles and applications related to plant life, habitat, water table and water quality*
 - *identifying environmental waste management best practices*
 - *identifying products and practices for reducing harm and positively impacting the environment*
 - *describing practices for maximizing green space and permeable surfaces*
-

Hardscape Installation and Maintenance

70 hours

- mitigates site risks.
- installs surface materials.
- installs retaining walls.
- maintains drainage systems.
- installs stone paving.
- uses timber construction techniques.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying hazards and describe safe work practices pertaining to installing landscape structures and hardscape installation*
- *identifying products and materials used in landscape structure construction and describe their applications and procedures for use*
- *identifying the methods and procedures used to perform site layout*
- *identifying specific tools and equipment relating to hardscape installation and describe their applications and procedures for use*
- *describing the procedures used to estimate quantities of materials required to install hardscape*

Physiology, Boreal, Montane and Wetland Plants

40 hours

- manages plant development.
- uses plants from the boreal forest region.
- uses plants from the montane region.
- uses plants from the wetlands.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *explaining photosynthesis, respiration, and other plant processes as they relate to plant growth and health*
- *describing phloem and water transport*
- *explaining the processes of protein synthesis and reproduction*
- *identifying physiological factors that affect plants response to stress*
- *identifying growing media conditions and properties*
- *identifying treatment methods*
- *identifying the soil characteristics that impact soil chemical and biological properties*
- *identifying Canadian and regional landscape standards and jurisdictional regulations*
- *describing the implications of fertilizer management on the practice of environmental stewardship*

Landscape Pests

50 hours

- practices integrated pest management.
- manages weeds.
- manages plant disease.
- manages pests.
- applies pesticide legislation.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *discussing the management of ecosystem to prevent organisms from becoming pests*
- *identifying common types of insects, their damage and their management*
- *explaining plant diseases, symptoms and compare fungi, bacteria and disease organisms*
- *assisting in the proper identification of weed problems and by discussing the methods of control*
- *describing and overseeing the practice of safe practices in the use, handling and transport of pesticide chemicals*
- *identifying the considerations for selecting and applying pest and disease management measures*
- *identifying common types of pests, diseases and disorders, and describe their characteristics and life cycles*
- *identifying common types of diseases and disorders and describe their characteristics and life cycles*
- *identifying the factors for selecting and applying pest and disease management measures*
- *describing the procedures used to implement pest and disease management measures*
- *identifying jurisdictional regulations pertaining to pest and disease management*
- *identifying specific tools, equipment and products relating to pest and disease management and describing their applications and procedures for use*
- *describing the procedures associated with the handling, transportation, storage and disposal of pest and disease management related products and materials*

Softscape Installation and Pruning

24 hours

- installs woody plants.
- installs mulch.
- prunes plants.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *describing the procedures used to inspect, use, maintain, store and transport pruning tools and equipment*
 - *identifying hazards and describe safe work practices pertaining to pruning*
 - *describing the purpose of pruning*
 - *identifying factors that affect pruning times*
 - *describing the procedures for removing plant parts and disposal of diseased and infested plant parts*
 - *describing the procedures used to inspect, use, maintain, store and transport pruning tools and equipment*
-



Level Three**8 weeks****240 hours**

Project Management**20 hours**

- provides customer service.
- plans projects.
- manages inventory.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *describing the processes associated with maintaining customer relations*
 - *identifying jurisdictional regulations pertaining to customer record information*
 - *identifying the project requirements when planning jobs and job tasks*
 - *describing the procedures for controlling inventory*
-

Landscape Construction and Irrigation**68 hours**

- constructs water features.
- installs landscape lighting.
- installs irrigation systems.
- maintains irrigation systems.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying types of landscape drawings and associated documentation and describe their characteristics and applications*
- *identifying the methods and procedures used to stake out points when performing site measurements and site layout as it pertains to construction site preparation*
- *identifying hazards and describe safe work practices pertaining to layout, grading and drainage*
- *describing the procedures used to install irrigation equipment and systems*
- *describing the factors in planning an irrigation system*
- *utilizing hydraulic data to design sprinkler irrigation systems*
- *explaining the block-system and quick-coupler design theories and design a residential irrigation system*
- *explaining the use of irrigation technology and regulatory requirements of water use*
- *describing irrigation requirements relative to plant type, soil type and environmental conditions*
- *identifying the components of residential and commercial irrigation systems*
- *explaining the various types of irrigation pumps*
- *explaining the design factors in both residential and commercial systems*
- *interpreting basic irrigation specifications and materials*
- *performing installation procedures for irrigation and landscape lighting systems*
- *both maintaining and repairing an irrigation system*
- *assisting the apprentice in understanding the importance of available pressure, flow rate and water source as it relates to irrigation design and troubleshooting*
- *identifying design techniques for water conservation and implementing water auditing procedures*
- *assisting the apprentice in understanding the importance of available pressure, flow rate and water source as it relates to irrigation design and troubleshooting*
- *identifying design techniques for water conservation and implementing water auditing procedures*
- *describing the procedures used to estimate quantities of materials required to install low voltage landscape lighting*

Softscape Maintenance

24 hours

- repairs softscapes.
- installs interior landscapes plants.
- maintains interior landscapes plants.
- practices snow and ice control.
- maintains landscape structures.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying hazards and describe safe work practices pertaining to repairing softscapes*
- *identifying specific tools and equipment relating to exterior softscape and describe their applications and procedures for use*
- *identifying the considerations for the selection of plants for interior uses*
- *describing the procedures used to maintain interior plants*
- *identifying selected interior plants by botanical, cultivar and common name*
- *discussing light, temperature, growing media and water for interior plants*
- *identifying the considerations for determining suitability of planting site for plant material*
- *identifying jurisdictional regulations pertaining to snow and ice control procedures and products*
- *identifying products used for snow and ice control*

Sustainable Horticultural Practices

40 hours

- applies environmental practices.
- uses introduced herbaceous plants.
- uses introduced woody plants.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *describing preservation, conservation and regeneration principles and applications related to plant life, habitat, water table and water quality*
- *describing the impact of the environment and landscapes on psychosocial health*
- *identifying products and practices for reducing harm and positively impacting the environment*
- *describing practices for maximizing green space and permeable surfaces*

Urban Forestry and Arboriculture

58 hours

- assesses tree physiology in the landscape.
- applies techniques to achieve plant independence in the landscape.
- assesses trees.
- protects trees in the landscape.
- prunes trees.
- removes trees.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying the value of environmental, economic and social impact of urban forests and arboriculture*
- *discussing to common goals and challenges involved in urban forest management*
- *explaining tree anatomy to determine the health of trees*
- *demonstrating pruning techniques such as crown reduction and raising, thinning and removal*
- *describing tree bracing, cabling and flexible support systems and other tree repair techniques*
- *demonstrate general chainsaw use, tree felling and removal rigging techniques and procedures*
- *identifying climbing gear and equipment, climbing techniques, selected rope knots and various aerial procedures and operations*
- *practising methods of determining tree conditions and risk assessment processes*
- *describing the factors involved in valuation and the replacement cost methods*
- *identifying the factors in inventory and describing the use of the Global Information System(GIS) for tree inventory*

- *calculating tree protection zones and construction site conservation of trees*
- *describing the means of liability issues and determining legislation related to arboriculture work*

Growing Facilities**30 hours**

- constructs a growing facility.
- operates a growing facility.
- creates a sanitary environment.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *explaining cost of production vs. purchase from other sources as it relates to nursery vs. field production, container production and sod production*
- *discussing and comparing selected nursery containers*
- *explaining the importance of standardized stock as it is referred to in the Canadian Nursery Landscape Association (CNLA) specification book*
- *practising storage practices, seed collection and selected treatments to enhance germination*
- *outlining the sod establishment, production and harvesting processes*
- *comparing plant container characteristics and growing media for plant production*
- *explaining how different greenhouse environments can influence plant growth*
- *demonstrating seeding and vegetative propagation techniques*
- *practising the transplanting of seedlings and potting-up of vegetable cuttings*
- *describing the benefits, procedures and tolerance factors for hardening off plants*
- *identifying common greenhouse pests and diseases and their damage symptoms*
- *describing efficient methods for packaging, storing and shipping greenhouse crops*
- *assessing the orientation of typical greenhouse structures*
- *identifying and operating the different systems of greenhouse environmental controls*

Level Four**8 weeks****240 hours**

Business Administration**14 hours**

- conducts post construction site assessments.
- schedules resources for a landscape project.
- uses coaching skills when training an apprentice.
- describes the role of the network of industry committees that represent trades and occupations
- uses Red Seal products to challenge an interprovincial examination.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *describing the Labour Standards Act, OH&S, WCB coverage and typical employee benefits packages*
 - *explaining employee retention and recruitment strategies*
 - *defining mentoring skills for enhancing employee productivity and job satisfaction*
 - *explaining the roles of the advisory network and apprenticeship committees*
 - *explaining basic financial information in operating a business*
-

Contract Management**42 hours**

- prepares estimates for landscape projects.
- implements contract security measures.
- prepares bids for landscape projects.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *assisting the apprentice prepare a quote for a landscape project*
 - *describing the parameters of the suppliers / contractors guarantees and warranties*
 - *assisting the apprentice prepare a written tender for a landscape project*
 - *describing selected types of contracts and regulations used in landscape construction and maintenance*
 - *assisting the apprentice to prepare a written schedule for a landscape project*
-

Landscape Design**70 hours**

- analyze landscape designs.
- uses drafting to create a landscape design.
- applies design processes to landscape projects.
- develops construction plans.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *introducing site assessment, design layout, implementation and finished landscape*
- *emphasizing the importance of customer requirements and understanding of the design and cost relationship*
- *developing manual graphic skills using selected drafting tools, drawings and landscape symbols*
- *applying the landscape design process to a selected landscape project*
- *developing a landscape master plan for a selected project*
- *preparing landscape construction plans for a project site*
- *assisting the apprentice prepare a quote for a landscape project*
- *describing the parameters of the suppliers / contractors guarantees and warranties*
- *assisting the apprentice prepare a written tender for a landscape project*
- *describing selected types of contracts and regulations used in landscape construction and maintenance*
- *assisting the apprentice to prepare a written schedule for a landscape project*
- *describing the functions and specifications of bid documents*
- *defining the materials and strategies of low impact development*

- *describing the functions of computer-aided drafting, 3D modelling and digital image rendering applications*

Sustainable Landscape Technologies

28 hours

- evaluates economics of sustainable landscape technologies.
- maintains green roofs.
- maintains living walls.
- manages rainwater.
- controls erosion.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *assisting the apprentice complete a carpentry project from interpreting plan details, estimating quantities and types of materials needed and construct a project from plan specifications*
- *developing a water feature, green roof or living walls project construction plan*
- *assisting the apprentice to design, estimate and construct a project in a water feature*
- *describing design and construction strategies reducing the environmental impact*

Specialty Crops

38 hours

- grows edible fruit species.
- grows vines.
- grows geophytes.
- grows bedding plants.
- grows ornamental grasses.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *identifying the components of the plant cell and types of meristematic tissues*
- *describing the functions and growth patterns of a plant stem*
- *identifying selected aspects of leaf morphology and the function of leaves*
- *comparing the internal structure and growth characteristics of different types of root systems*
- *explaining the processes of pollination and fertilization of different flower types*
- *identifying the major internal parts, fruit types and the process of fruit development*
- *Introducing the apprentice to characteristics of parts of plants and their life cycle.*
- *comparing plant container characteristics and growing media for plant production*
- *demonstrating seeding and vegetative propagation techniques*
- *practising the transplanting of seedlings and potting-up of vegetable cuttings*
- *describing the benefits, procedures and tolerance factors for hardening off plants*

Nursery Production and Greenhouse Crops

48 hours

- propagates crops.
- transplants crops.
- grows crops.
- harvests crops.
- winterizes crops.
- ships crops.

Mentors can assist the apprentice to prepare for this section of technical training by:

- *comparing plant container characteristics and growing media for plant production*
- *explaining how different greenhouse environments can influence plant growth*
- *demonstrating seeding and vegetative propagation techniques*
- *practising the transplanting of seedlings and potting-up of vegetable cuttings*
- *describing the benefits, procedures and tolerance factors for hardening off plants*
- *identifying common greenhouse pests and diseases and their damage symptoms*
- *describing efficient methods for packaging, storing and shipping greenhouse crops*

- *assessing the orientation of typical greenhouse structures*
- *identifying and operating the different systems of greenhouse environmental controls*

Consider apprenticeship training as an investment in the future of your company and in the future of your workforce. Ultimately, skilled and certified workers increase your bottom line.

Get involved in the apprenticeship training system. Your commitment to training helps to maintain the integrity of the trade.

Do you have employees who have been working in the trade for a number of years but don't have trade certification? Contact your local apprenticeship office for details on how they might obtain the certification they need.

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