

Landscape Horticulturist Guide to Course Content

2021



Online: www.saskapprenticeship.ca

Recognition:

To promote transparency and consistency, 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 GUIDE TO COURSE CONTENT

To facilitate understanding of the occupation, this guide to course content 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.

Elements of harmonization of apprenticeship training: includes adoption of Red Seal trade name, number of levels of apprenticeship, total training hours (on-the-job and in-school) and consistent sequencing of technical training content. Implementation for harmonization took place progressively. Since Saskatchewan apprentices attend technical training in Alberta. Alberta was responsible to make the Harmonized changes to their curriculum.

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.

Training Profile Chart: a chart which outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training.

Technical Training Course Content for the Landscape Horticulturist trade: a chart which outlines the model for SATCC technical training sequencing. For the harmonized level of training, a cross reference to the Harmonized apprenticeship technical training sequencing, at the learning outcome level, is provided.

Appendix A: Post Harmonization Training Profile Chart: a chart which outlines the finalized model for SATCC technical training sequencing with a cross reference to the Harmonized apprenticeship technical training sequencing, at the topic level.

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: To graduate from each level of the apprenticeship program, an apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1500 hours each year. Total trade time required is 6000 hours and at least 4 years in the trade.

There are four levels of technical training 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.

- Level One: 8 weeks
- Level Two: 8 weeks
- Level Three: 8 weeks
- Level Four: 8 weeks

The information contained in this guide to course content details the technical training delivered for each level of apprenticeship. An apprentice spends approximately 15% of their apprenticeship term in a technical training institute learning the technical and theoretical aspects of the trade. The hours and percentages of technical and practical training may vary according to class needs and progress.

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

Entrance Requirements for Apprenticeship Training

Your grade twelve transcripts (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 journeyman 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.

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 competency statements which support each subtask of the trade. 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 6000.

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

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

White boxes are “Topics,” grey boxes are “In Context”. In context means learning that has already taken place and is being applied to the applicable task. Learning outcomes for in context topics are accomplished in other topics in that level.

Level 1 (2017/2018 implementation)	Level 2 (2018/2019 implementation)	Level 3 (2019/2020 implementation)	Level 4 (2020/2021 implementation)
	Safety-Related Functions	Safety-Related Functions	Safety-Related Functions
			Tools and Equipment
Safety-Related Functions	Routine Trade Activities	Routine Trade Activities	
Tools, Equipment and Vehicles	Tools, Equipment and Vehicles	Tools, Equipment and Vehicles	
Organizes Work	Organizes Work	Organizes Work	Organizes Work
		Marketing and Sales	Marketing and Sales

Level 1 (2017/2018 implementation)	Level 2 (2018/2019 implementation)	Level 3 (2019/2020 implementation)	Level 4 (2020/2021 implementation)
Safety-Related Functions			
Communication			Mentoring
Horticultural Practices	Horticultural Practices	Horticultural Practices	Horticultural Practices
Environmental Practices	Environmental Practices	Environmental Practices	Environmental Practices
Pre-Construction Activities	Pre-Construction Activities		Pre-Construction Activities
	Hardscape Installation	Hardscape Installation	
Softscape Installation	Softscape Installation	Softscape Installation	
	Hardscape Maintenance	Hardscape Maintenance	
	Softscape Maintenance	Softscape Maintenance	
			Green Infrastructure Installation
			Green Infrastructure Maintenance

LANDSCAPE HORTICULTURIST TASK MATRIX CHART

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	1.02 Maintains safe work environment 1	
A-2 Uses tools, equipment and vehicles 27%	2.01 Uses hand tools 1	2.02 Uses power tools 1	2.03 Uses measuring equipment 1
	2.04 Uses vehicles and motorized equipment, trailers and attachment 1		
A-3 Organizes work 27%	3.01 Performs site assessments 1	3.02 Uses documentation and reference material	3.03 Maintains records
	A-3.04 Participates in job planning activities	A-3.05 Orders materials	A-3.06 Organizes materials and equipment

Task A-4 Participates in marketing and sales 15%	A-4.01 Controls inventory	A-4.02 Sells products and services	A-4.03 Maintains customer relations 2
	A-4.04 Prepares estimates		
Task A-5 Uses communication and mentoring techniques 12%	A-5.01 Uses communication techniques 1	A-5.02 Uses mentoring techniques	

B – APPLIES HORTICULTURAL PRINCIPLES **24%**

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

C – PERFORMS LANDSCAPE CONSTRUCTION

33%

Task C-8 Performs pre-construction activities 24%	C-8.01 Participates in landscape design activities 2	C-8.02 Prepares construction site 1, 2	C-8.03 Performs grading 1, 4
	C-8.04 Installs drainage systems 1		
Task C-9 Installs hardscape 32%	C-9.01 Installs landscape structures 1	C-9.02 Installs surface materials 2	C-9.03 Installs steps and retaining walls 2
	C-9.04 Installs irrigation systems 3	C-9.04 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 1	C-10.02 Installs exterior landscape plants 1	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

3

D – PERFORMS LANDSCAPE MAINTENANCE

24%

Task D-12 Maintains hardscape
32%

D-12.01 Maintains drainage systems

1

D-12.02 Maintains landscape structures

3

D-12.03 Maintains surface materials

2

D-12.04 Maintains steps and retaining walls

3

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

3

D-13.02 Maintains interior softscape

1

D-13.03 Maintains turfgrass

1

D-13.04 Propagates plant material

1

D-13.05 Repairs softscape

1

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

2

13.03 Installs equipment and components for pressure systems

3

D-14.03 Maintains erosion control

4

D-14.04 Maintains biodiverse plantings and natural areas

3

E – WORKS IN PRODUCTION OF 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)	E-17.06 Ships 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.

TRAINING PROFILE CHART

Since Landscape Horticulturist Technical Training is completed in Alberta, this Training Profile Chart represents Alberta Apprenticeship technical training which is performed at the topic level.

Alberta Level One	Hours
Workplace Safety and Occupational Skills	14
Tools, Equipment and Vehicles	34
Site Assessment, Grading and Drainage	22
Plant properties, Grassland and Parkland	74
Soil and Water	60
Turfgrass and Exterior Softscape Maintenance	36
	240

Alberta Level Two	Hours
Safety-Related Functions	
Communications	
Surveying and Site Assessment	32
Conservation	24
Hardscape Installation and Maintenance	70
Physiology, Boreal, Montane and Wetland Plants	40
Landscape Pests	50
Softscape Installation and Pruning	24
	240

Alberta Level Three	Hours
Project Management	20
Landscape Construction and Irrigation	68
Softscape Maintenance	24
Sustainable Horticultural Practices	40
Urban Forestry and Arboriculture	50
Growing Facilities	30
	240

Alberta Level Four	Hours
Business Administration	14
Contract Management	42
Landscape Design	70
Sustainable Landscape Technologies	28
Specialty Crops	38
Nursery Production and Greenhouse Crops	48
	240

TECHNICAL TRAINING COURSE CONTENT

This chart outlines the model for Harmonized technical training sequencing. Saskatchewan apprentices attend technical training in Olds, Alberta. An alternative online apprenticeship option is available by taking classes through the University of Saskatchewan's Prairie Horticulture Certificate Courses. For more information about this option, refer to the Saskatchewan Apprenticeship Online Option Guide to Course Content document. For each harmonized level of training, a cross reference to the Red Seal Occupational Standard (RSOS) apprenticeship technical training sequencing, at the learning outcome level, is provided.

Sub-tasks listed are the minimum to be covered in a topic. Related sub-tasks not listed may be used as a reference and taught "in context" in other topics.

Implementation for harmonization took place progressively. Alberta was responsible to make the Harmonized changes to their curriculum.

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 		
RSOS topics covered in this section of training:		
A-Performs common occupational skills		
A-1 Safety-related functions		
A-1.01 Uses personal and protective equipment (PPE) and safety equipment		
<ul style="list-style-type: none"> • PPE, their applications, maintenance and procedures for use • safety equipment, their applications, maintenance and procedures for use • regulatory requirements pertaining to PPE and safety equipment 		
A-1.02 Maintains safe work environment		
<ul style="list-style-type: none"> • regulatory requirements pertaining to safety • situational hazards, risks and mitigation measures 		
A-5 Uses communication and mentoring techniques		
5.01 Uses communication techniques		
<ul style="list-style-type: none"> • trade terminology • effective communication practices 		
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 		

RSOS topics covered in this section of training:

A-2 Uses tools, equipment and vehicles

A-2.01 Uses hand tools

- hand tools, their applications, maintenance and procedures for use

A-2.02 Uses power tools

- power tools and equipment, their applications, maintenance and procedures for use

A-2.03 Uses measuring equipment

- measuring equipment, their applications, maintenance and procedures for use

A-2.04 Uses vehicles and motorized equipment, trailers and attachments

- vehicles, motorized equipment, attachments and trailers, and their applications, operation and procedures for use

Site Assessment, Grading and Drainage

22 hours

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

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-3 Organizes Work

A-3.01 Performs site assessments

- procedures used to perform site assessment

A-3.02 Uses documentation and reference material

- trade related documentation and their use
- landscape drawings and associated documentation

A-3.03 Maintains records

- procedures used to prepare and maintain safety records and work record

A-3.07 Transports materials

- procedures for transporting materials

A-3.08 Transports equipment

- procedures for transporting equipment

A-5 Communication Techniques

A-5.01 Uses communication techniques

- trade terminology
- effective communication practices

C – Performs landscape construction

C-8 Performs pre-construction activities

C-8.03 Performs grading

- procedures used to perform grading

C-8.04 Installs drainage systems

- procedures used to perform grading and installation of drainage systems

Plant properties, Grassland and Parkland

74 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-6 Applies horticultural practices

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
 - plants, their characteristics and cultural requirements
-

- plant growth and development
 - plant nutrient requirements
- B-6.02 Manages plant health and growing conditions
- growing media conditions and properties
 - soil types and soil amendments
 - plant health
 - characteristics of fertilizers
 - jurisdictional regulations pertaining to fertilizers
 - procedures and equipment used for the application, handling, transport, storage and disposal of fertilizers

Soil and Water

60 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-7 Applies environmental practices

B-7.01 Practices environmental stewardship

- environmental stewardship principles
- landscaping practices that support environmental stewardship

Turfgrass and Exterior Softscape Maintenance

36 hours

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

RSOS topics covered in this section of training:

C – Performs landscape construction

C-10 Installs softscape

C-10.01 Installs growing media

- procedures used to install growing media

C-10.05 Installs turf from seed

- turf establishment from seed and installation procedures

C-10.06 Installs sod

- turf establishment from sod methods and the installation procedures

D – Performs landscape maintenance

D-13 Maintains softscape

D-13.01 Maintains exterior softscape

- exterior plants, their characteristics and cultural requirements
- procedures used to maintain exterior softscape

D-13.03 Maintains turfgrass

- turfgrass establishment and maintenance
- turfgrass maintenance products, their characteristics and procedures for use

Level One topics from the RSOS that are taught in context:

There are no in-context topics in Level 1.

For details regarding the In-Context Topic, see page 27

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

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-3 Organizes Work

A-3.01 Performs site assessments

- procedures used to perform site assessment

A-3.02 Uses documentation and reference material

- trade related documentation and their use
- landscape drawings and associated documentation

A-3.03 Maintains records

- procedures used to prepare and maintain safety records and work records

A-3.07 Transports materials

- procedures for transporting materials

A-3.08 Transports equipment

- procedures for transporting equipment

C – Performs landscape construction

C-8 Performs pre-construction activities

C-8.02 Prepares construction site

- procedures used to prepare construction site
 - landscape drawings and associated documentation
 - procedures used to perform site layout
-

Conservation

24 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-7 Applies environmental practices

B-7.01 Practices environmental stewardship

- environmental stewardship principles
- landscaping practices that support environmental stewardship

B-7.03 Practices soil stewardship

- growing media
- soil types and soil amendments
- interpreting test results

B-7.04 Practices water stewardship

- selecting and applying fertilizers and amendments
 - minimizing harm to soil structure, health and microbiome
 - conserving soil and preserving soil health
-

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

RSOS topics covered in this section of training:

C – Performs landscape construction

C-9 Installs hardscape

C-9.02 Installs surface materials

- procedures used to install surface materials

C-9.03 Installs steps and retaining walls

- procedures used to install wall units and steps

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-6 Applies horticultural practices

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
- knowledge of plants, their characteristics and cultural requirements
- plant growth and development
- plant nutrient requirements

B-6.02 Manages plant health and growing conditions

- growing media conditions and properties
- soil types and soil amendments

B-6.03 Prunes plant material

D – Performs landscape maintenance

D-13 Maintains softscape

D-13.01 Maintains exterior softscape

- exterior plants, their characteristics and cultural requirements
- procedures used to maintain exterior softscape

D-13.04 Propagates plant material

- procedures associated with plant propagation

Landscape Pests

50 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-6 Applies horticultural practices

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
- knowledge of plants, their characteristics and cultural requirements
- plant growth and development
- plant nutrient requirements

B-6.02 Manages plant health and growing conditions

- growing media conditions and properties

- soil types and soil amendments
- plant health
- characteristics of fertilizers
- jurisdictional regulations pertaining to fertilizers
- procedures and equipment used for the application, handling, transport, storage and disposal of fertilizers

B-6.03 Prunes plant material

- procedures used to inspect, use, maintain, store and transport pruning tools and equipment
- procedures for pruning
- procedures for the disposal of diseased and infested plant parts

Softscape Installation and Pruning

24 hours

- installs woody plants
- installs mulch
- prunes plants

RSOS topics covered in this section of training:

C Performs landscape construction

C-10 Installs Hardscape

C-10.02 Installs exterior landscape plants

- procedures used to install exterior landscape plant material
- pruning exterior plant material, the application and procedures for use
- fertilizers, their application, and procedures for use
- irrigation equipment and systems, their applications and operation to achieve adequate irrigation

C-10.03 Transplants plants

- transplanting plants

C-10.04 Installs mulch

- mulch materials, the application and procedures for use

Level Two topics from the RSOS that are taught in context:

A-Performs common occupational skills

A-1 Safety Related Functions

A-1.01 Uses personal protective equipment (PPE) and safety equipment.

- PPE, their applications, maintenance and procedures for use
- safety equipment, their applications, maintenance and procedures for use
- regulatory requirements pertaining to PPE and safety equipment

A-1.02 Maintains safe work environment

- regulatory requirements pertaining to safety
- situational hazards, risks and mitigation measures

B- Applies horticultural principles

B-5 Communications

B-5.01 Uses communication techniques

- trade terminology
- effective communication practices

For details regarding the In-Context Topic, see page 27

Level Three

8 weeks

240 hours

Project Management

20 hours

- provides customer service

- plans projects
- manages inventory

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-4 Participates in marketing and sales

A-4.01 Controls inventory

- procedures for controlling inventory

A-4.02 Sells products and services

- sales techniques
- products and services

A-4.03 Maintains customer relations

- customer relations
- jurisdictional regulations

Landscape Construction and Irrigation

68 hours

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

RSOS topics covered in this section of training:

D – Performs landscape maintenance

D-12 Maintains hardscape

D-12.02 Maintains landscape structures

- procedures and products used to maintain landscape structures

D-12.05 Maintains irrigation systems

- irrigation equipment and systems, their applications and operation
- procedures used to maintain, troubleshoot and repair irrigation equipment and systems

D-12.06 Maintains water features

- maintenance of water features
- procedures and products used to maintain water features

D-12.07 Maintains landscape lighting

- maintenance of low voltage landscape lighting
- procedures used to maintain low voltage landscape lighting

D-12.08 Practices snow and ice control

- snow and ice control and the procedures used

D-12.09 Repairs hardscape

- procedures and products used to repair hardscapes

Softscape Maintenance

24 hours

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

RSOS topics covered in this section of training:

C Performs landscape construction

C-10 Installs softscape

C-10.07 Installs interior landscape plants.

- procedures used to install interior landscape plants
- pruning interior landscape plants
- fertilizers, their application and procedures for use
- irrigation equipment and systems, their applications and operation

D – Performs landscape maintenance

D-13 Maintains softscape

D-13.02 Maintains interior softscape

- interior plants, their characteristics and cultural requirements
- procedures used to maintain interior softscape
- pruning interior landscape plants
- fertilizers, their application and procedures for use
- irrigation equipment and systems, their applications and operation

D-13.05 Repairs softscape

- procedures used to repair softscapes

Sustainable Horticultural Practices

40 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-7 Applies environmental practices

B-7.01 Practices environmental stewardship

- environmental stewardship principles
- landscaping practices that support environmental stewardship

B-7.04 Practices water stewardship

- landscaping practices that support water stewardship

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-6 Uses horticultural principles

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
- plants, their characteristics and cultural requirements
- plant growth and development
- plant nutrient requirements

B-6.03 Prunes plant material

- procedures used to inspect, use, maintain, store and transport pruning tools and equipment
- demonstrate knowledge of the procedures for pruning
- procedures for the disposal of diseased and infested plant parts

B-6.04 Manages pests, diseases and invasive species

- pests and diseases and the procedures used to manage them
- jurisdictional regulations and documentation pertaining to pest and disease management
- pest control products, formulations and application equipment
- procedures used to handle, transport, apply, store and dispose of pest and disease management products and tools

Growing Facilities

30 hours

- constructs a growing facility
- operates a growing facility

- creates a sanitary environment
-

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-1 Performs safety-related functions

A-1.01 Uses personal protective equipment (PPE) and safety equipment

- PPE, their applications, maintenance and procedures for use
- safety equipment, their applications, maintenance and procedures for use
- regulatory requirements pertaining to PPE and safety equipment

A-2 Uses tools, equipment and vehicles

A-2.01 Uses hand tools

- hand tools, their applications, maintenance and procedures for use

A-2.02 Uses power tools

- power tools and equipment, their applications, maintenance and procedures for use

A-2.03 Uses measuring equipment

- measuring equipment, their applications, maintenance and procedures for use

A-2.04 Uses vehicles and motorized equipment, trailers and attachments

- vehicles, motorized equipment, attachments and trailers, and their applications, operation and procedures for use

A-3 Organizes Work

A-3.01 Performs site assessments

- procedures used to perform site assessment

A-3.02 Uses documentation and reference material

- trade related documentation and their use
- landscape drawings and associated documentation

A-3.07 Transports materials

- procedures for transporting materials

A-3.08 Transports equipment

- procedures for transporting equipment

A-4 Participates in marketing and sales

A-4.01 Controls inventory

- procedures for controlling inventory

A-4.02 Sells products and services

- sales techniques
- products and services

A-4.03 Maintains customer relations

- customer relations
 - jurisdictional regulations
-

Level Three topics from the RSOS that are taught in context:

A-Performs common occupational skills

A-1.01 Uses personal protective equipment (PPE) and safety equipment.

- *PPE, their applications, maintenance and procedures for use*
- *safety equipment, their applications, maintenance and procedures for use*
- *regulatory requirements pertaining to PPE and safety equipment*

A-1.02 Maintains safe work environment

- *regulatory requirements pertaining to safety*
- *situational hazards, risks and mitigation measures*

For details regarding the In-Context Topic, see page 27

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

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-3 Organizes work

A-3.01 Performs site assessments

- procedures used to perform site assessment

A-3.02 Uses documentation and reference material

- trade related documentation and their use
- landscape drawings and associated documentation

A-3.03 Maintains records

- procedures used to prepare and maintain safety records and work records

A-3.04 Participates in job planning activities

- procedures used to plan job tasks

A-5 Uses communication and mentoring techniques

A-5.02 Uses mentoring techniques.

- strategies for learning skills in the workplace
 - strategies for teaching skills in the workplace
-

Contract Management

42 hours

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

RSOS topics covered in this section of training:

A-Performs common occupational skills

A-4 Participates in marketing and sales

4.04 Prepares estimates

- procedures used to calculate and estimate job requirements
-

Landscape Design

70 hours

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

RSOS topics covered in this section of training:

C Performs landscape construction

C-8 Performs pre-construction activities

C-8.01 Participates in landscape design activities

Sustainable Landscape Technologies**28 hours**

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

RSOS topics covered in this section of training:**B- Applies horticultural principles****B-7 Applies environmental practices**

7.01 Practices environmental stewardship

- environmental stewardship principles
- landscaping practices that support environmental stewardship

7.02 Practices biodiversity enhancement

- biodiversity
- practice of biodiversity
- including biodiversity within a landscape design and the development process

C Performs landscape construction**C- 11 Installs green infrastructure systems**

11.01 Selects green infrastructure

- green infrastructure principles
- green infrastructure practices

11.02 Installs green roofs and walls

- process and procedures of the installation of green roofs and walls
- types and functions of plants used on green roofs and walls
- growing media and walls used on green roofs
- components of green roofs and walls
- site safety

11.03 Installs rainwater and stormwater management systems

- rainwater harvesting systems
- rainwater and stormwater harvesting components and stormwater management systems
- retention systems
- process and procedures for the installation of rainwater and stormwater management systems
- benefits of rainwater and stormwater management systems

11.04 Installs erosion control

- erosion control material and procedures for installation

11.05 Installs biodiverse plantings and natural areas

- biodiverse plantings and natural areas
- quality standard of plant material used for biodiverse plantings and natural areas

Specialty Crops**38 hours**

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

RSOS topics covered in this section of training:**B- Applies horticultural principles****B-6 Applies horticultural practices**

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
- plants, their characteristics and cultural requirements
- plant growth and development

- plant nutrient requirements

B-6.04 Manages pests, diseases and invasive species

- of pests and diseases and the procedures used to manage them
- jurisdictional regulations and documentation pertaining to pest and disease management
- pest control products, formulations and application equipment
- procedures used to handle, transport, apply, store and dispose of pest and disease management products and tools

Nursery Production and Greenhouse Crops

48 hours

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

RSOS topics covered in this section of training:

B- Applies horticultural principles

B-6 Applies horticultural practices

B-6.01 Identifies plants and plant requirements

- International Code of Nomenclature for algae, fungi, and plants used for plant identification
- plants, their characteristics and cultural requirements
- plant growth and development
- plant nutrient requirements

B-6.04 Manages pests, diseases and invasive species

- of pests and diseases and the procedures used to manage them
- jurisdictional regulations and documentation pertaining to pest and disease management
- pest control products, formulations and application equipment
- procedures used to handle, transport, apply, store and dispose of pest and disease management products and tools

Level Four topics from the RSOS that are taught in context:

A-Performs common occupational skills

A-1 Safety Related Functions

A-1.01 Uses personal protective equipment (PPE) and safety equipment.

A-1.02 Maintains safe work environment

A-2 Tools, Equipment and Vehicles

2.01 Uses hand tools.

2.02 Uses power tools.

2.03 Uses measuring equipment.

2.04 Uses vehicles, motorized equipment, trailers and attachments.

For details regarding the In Context Topic, see page 27

IN CONTEXT TOPICS

In context means learning that has already taken place and is being applied to the applicable task. Learning outcomes for in context topics are accomplished in other topics in that level.

A-Performs common occupational skills

A-3 Organizes Work

A-3.01 Organizes project tasks and procedures

- procedures used to plan and organize work
- project costs and efficient trade practices
- job specific technology

A-3.02 Organizes materials and supplies

- procedures used to organize and maintain materials and supplies

A-2 Tools, Equipment and Vehicles

2.01 Uses hand tools.

- hand tools, their applications, maintenance and procedures for use

2.02 Uses power tools.

- power tools and equipment, their applications, maintenance and procedures for use

2.03 Uses measuring equipment.

- measuring equipment, their applications, maintenance and procedures for use

2.04 Uses vehicles, motorized equipment, trailers and attachments.

- vehicles, motorized equipment, attachments and trailers, and their applications, operation and procedures for use

APPENDIX A: POST HARMONIZATION TRAINING PROFILE CHART

This chart which outlines the finalized model for SATCC technical training sequencing with a cross reference to the Harmonized apprenticeship technical training sequencing, at the topic level.

Implementation for harmonization will take place progressively. Level one to be implemented in 2017/2018, level two 2018/2019, level three 2019/2020, and level four in 2020/2021.

Alberta Level One	Hours	Pan-Canadian Harmonized Level One
Workplace Safety and Occupational Skills	14	Safety-Related Functions
Trade Related Safety	34	Communication
Tools, Equipment and Vehicles		Tools, Equipment and Vehicles
Soil and Water	60	Environmental Practices
Plant properties, Grassland and Parkland	74	Horticultural Practices
Site Assessment, Grading and Drainage	22	Pre-Construction Activities
Turfgrass and Exterior Softscape Maintenance	36	Organizes Work
		Softscape Installation
		Softscape Maintenance
	240	

Alberta Level Two	Hours	Pan-Canadian Harmonized Level Two
Safety-Related Functions (In-Context)		Safety-Related Functions (In-Context)
Communications (In-Context)		Communications (In-Context)
Softscape Installation and Pruning	8	Tools, Equipment and Vehicles
		Softscape Installation
		Softscape Maintenance
Surveying and Site Assessment	32	Organizes Work
		Pre-Construction Activities
Physiology, Boreal, Montane and Wetland Plants	50	Horticultural Practices
Landscape Pests	40	
Conservation	24	
Hardscape Installation and Maintenance	70	Hardscape Installation
		Hardscape Maintenance
	240	

Alberta Level Three	Harmonized Level Three	Hours
Tools, Equipment and Vehicles	Project Management	20
Organizes Work	Landscape Construction and Irrigation	68
Marketing and Sales		
Horticultural Practices	Urban Forestry and Arboriculture	50
Environmental Practices	Sustainable Horticultural Practices	40
Hardscape Installation		
Softscape Installation	Softscape Maintenance	24
Hardscape Maintenance		
Softscape Maintenance	Growing Facilities	30
		240

Alberta Level Four	Harmonized Level Four	Hours
Organizes Work		
Mentoring		
Horticultural Practices	Specialty Crops	38
	Nursery Production and Greenhouse Crops	48
Environmental Practices	Sustainable Landscape Technologies	28
Pre-Construction Activities	Business Administration	14
Marketing and Sales	Contract Management	42
Green Infrastructure Installation	Landscape Design	70
Green Infrastructure Maintenance		

Exceed Topics

Throughout this guide to course content there are topics which exceed the minimum scope of work as set out in the Landscape Horticulturist RSOS. Industry in Saskatchewan has deemed certain topics to fall within the scope of work of the Landscape Horticulturist trade in Saskatchewan and therefore require technical training to cover these topics.