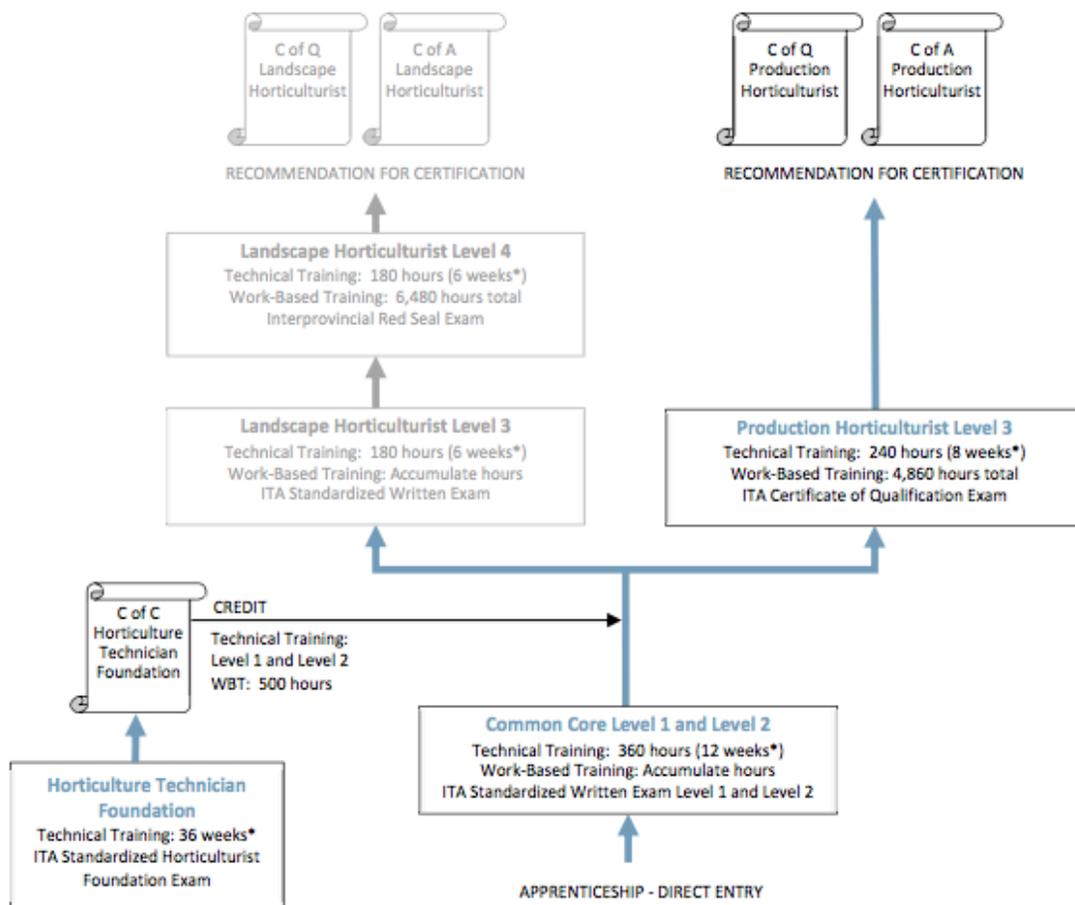


Horticulturist Technician Foundation Training Program

Overview

Apprenticeship Pathway

This graphic provides an overview of the Production Horticulturist apprenticeship pathway.



C of Q = Certificate of Qualification
 C of A = Certificate of Apprenticeship
 C of C = Certificate of Completion
 WBT = Work-Based Training

*Suggested duration based on 30-hour week

OCCUPATIONAL ANALYSIS CHART

Horticulture Technician Foundation

USES OCCUPATIONAL SKILLS A	Use personal protective equipment (PPE) A1 1 2	Identify fire types and extinguishing methods A2 1	Use WHMIS A3 1	Recognize work hazards A4 1	Demonstrate basic horticultural skills A5 1 2	Identify relevant legislation, regulations and standards A6 1	
	USES AND MAINTAINS TOOLS AND EQUIPMENT B	Use and maintain hand tools and power tools B1 1 2	Use and maintain measuring equipment B2 1	Operate vehicles and motorized equipment B3 1 2	Maintain vehicles and motorized equipment B4 1 2	Use and maintain equipment attachments B5 2	
		ORGANIZES WORK C	Communicate with others C6 1 2	Organize plants, materials and equipment C9 2	Maintain safe work environment C10 1 2	Examine interpersonal and supervisory skills C11 1 2	
	ANALYZES AND MAINTAINS PLANT HEALTH E		Identify plants and plant requirements E1 1 2	Manage growing conditions E2 2	Manage pests and diseases E3 1 2	Describe plant science as it applies to horticulture E4 1 2	Describe physical and biological characteristics of soil and soilless media E5 1

Horticulture Technician Level 1

Line A	USES OCCUPATIONAL SKILLS
A1	Uses personal protective equipment (PPE)
A2	Identify fire types and extinguishing methods
A3	Use WHMIS
A4	Recognize work hazards
A5	Demonstrate basic horticulture skills
A6	Identify relevant legislations, regulations and standards
Line B	USES AND MAINTAINS TOOLS AND EQUIPMENT
B1	Use and maintain hand tools and power tools
B2	Use and maintain measuring equipment
B3	Operate vehicles and motorized equipment
B4	Maintain vehicles and motorized equipment
Line C	ORGANIZES WORK
C6	Communicate with others
C10	Maintain safe work environment
C11	Examine interpersonal and supervisory skills
Line E	ANALYZES AND MAINTAINS PLANT HEALTH
E1	Identify plants and plant requirements
E3	Manage pests and diseases
E4	Describe plant science as it applies to horticulture
E5	Describe physical and biological characteristics of soil and soilless media

Horticulture Technician Level 2

Line A	USES OCCUPATIONAL SKILLS
A1	Uses personal protective equipment (PPE)
A5	Demonstrate basic horticulture skills
Line B	USES AND MAINTAINS TOOLS AND EQUIPMENT
B1	Use and maintain hand tools and power tools
B3	Operate vehicles and motorized equipment
B4	Maintain vehicles and motorized equipment
B5	Use and maintain equipment attachments
Line C	ORGANIZES WORK
C6	Communicate with others
C9	Organize plants, materials and equipment
C10	Maintain safe work environment
C11	Examine interpersonal and supervisory skills
Line E	ANALYZES AND MAINTAINS PLANT HEALTH
E1	Identify plants and plant requirements
E2	Manage growing conditions
E3	Manage pests and diseases
E4	Describe plant science as it applies to horticulture
E6	Describe chemical characteristics of soil and soilless media

1. Facility Requirements – Horticultural Tech Foundation

Classroom Area

- Approximately 900 square feet
- Comfortable seating and tables suitable for training, teaching, lecturing and drafting
- Compliance with all local and national fire code and occupational safety requirements
- Lighting controls to allow easy visibility of projection screen while also allowing students to take notes
- Windows must have shades or blinds to adjust sunlight
- Heating/Air conditioning for comfort all year round
- In-room temperature regulation to ensure comfortable room temperature
- In-room ventilation sufficient to control training room temperature
- Acoustics in the room must allow audibility of the instructor
- White marking board with pens and eraser (optional: flipchart in similar size)
- Projection screen or projection area at front of classroom
- Overhead projector and a multi-media (data) projector

Shop Area

- Access to a service bay – approximately 600 square feet
- Access to a site for equipment operation – minimum one acre
- Access to all tools and equipment as listed for Level Two

Lab Requirements

- Botany or Science teaching lab outfitted with compound and dissecting microscopes - approximately 600 square feet
 - Access to live 'in situ' plant material as well as herbaria, and visual samples (slides, photographic databases, etc.)
 - Microscope slides showing root, stem and leaf anatomy (monocot and dicot)
 - Microscope slides showing woody stem growth
 - Hand lens (10X)
 - Glassware, lamps, stir plate (with heating capacity)
 - Refrigerator and microwave
 - Collection of arthropods, disease organisms, and examples of plant stress
- Soil Science or Chemistry teaching lab - approximately 600 square feet
 - Glassware, lamps, stir plate (with heating capacity)
 - Refrigerator, drying oven and microwave
 - Nested sieves, shakers, scales
 - Hydrometers and sedimentation cylinders
 - Munsell colour books
 - pH meters
 - Soil sampling equipment

Student Facilities

- Adequate lunch room as per WorkSafeBC requirements
- Adequate washroom facilities as per WorkSafeBC requirements
- Personal storage lockers

Instructor's Office Space

- Suitable space and office furniture necessary for instructor to prepare lessons and secure file records

Other

- Access to a botanical garden
- Access to container nursery stock
- Access to field-grown stock/plant material that can be prepared for transplanting
- Trailer and tractor nursery equipment
- Access to large tree transplanting equipment
- Nursery hand carts and tree dollies
- Multiple nursery stock containers

2. Tool & Equipment Requirements

SHOP

Motorized Equipment

- 3-reel turf mower
- Backhoe
- Baggers for leafs
- Blowers (backpack, hand held, push, earthauger)
- Brush cutter
- Clearing saw
- Edgers
- Electric powered utility vehicle
- Elevated work platforms
- Excavator
- De-thatcher
- Flat filler
- Fork lift
- Front end loader
- Gas powered utility vehicle (Gator)
- Hedge trimmer (extension, long reach)
- Lawn/weed trimmers (gas & electric)
- Pot filler
- Powered rollers
- Pressure washer
- Pumps
- Ram compactor (jumping jack)
- Riding mowers/mulchers
- Skid steer loader
- Soil screener
- Sterilizers
- String trimmer
- Tractors
- Trucks
- Turf and tree sprayer

Required – Attachments

- Bucket
- Forks
- Trailer
- Spray equipment

Recommended – Attachments

- Aerator
- Auger/post hole digger
- Blade
- Cultivator
- Discer
- Harrow
- Leaf vacuum
- Overseeder
- Plough
- Power sweeper
- Rototiller
- Snow blower
- Soil profiler
- Top dresser
- Tow behind de-thatcher
- Tow behind thatcher
- Tree spade
- U-blade
- Vacuum

Standard Power Tools

- Chainsaw
- Electric drill
- Fertilizer injector
- Grinder
- Hammer drill
- Mower/mulcher
- Power cultivator (rototiller)
- Power sprayer
- Vacuum (wet/dry, leaf)
- Walk-behind aerator

Standard Hand Tools

- Axes
- Backpack sprayer
- Boxcutters
- Brick carriers
- Brick splitter
- Brooms
- Bulb planters
- Cart
- Chains
- Chisels
- Clearing axes
- Core samplers (probe)
- Crimpers
- Crowbars
- Cultivator (manual)
- De-thatching rake
- Dolly
- Files
- Flags
- Garden forks
- Grease guns
- Hammers (hand, sledge)
- Hand tamper
- Handheld watering equipment
- Landscape rakes
- Loppers
- Mallet
- Microscope
- Pickaxes
- Picks
- Pitch forks
- Pliers (various types)
- Pry bar
- Punch
- Rakes (various types)
- Screwdrivers (various types)
- Seed/fertilizer spreader
- Sharpening tools
- Shovels (coal, clam, scoop/barn, spade, garden)
- Side cutters
- Soil screener
- Spades (various types)
- String line
- Tap and die
- Tape measure
- Tarps
- Tie-downs (straps, chains)
- Tree cart
- Trowels
- Water key
- Weed digger
- Wheelbarrow
- Wheel chocks
- Wrenches

Measuring Equipment

- Anemometer
- EC meter
- Hydrometer
- Hygrometer
- Levels (line, hand, zip laser)
- Sedimentation cylinder
- Light meter
- pH meter
- Tape measure
- Thermometer
- Tire pressure meter

OFFICE EQUIPMENT

Recommended

- Camera
- Communication devices
- Computers

STUDENT EQUIPMENT (supplied by training provider)

Required - PPE and Safety Equipment

- Cones
- Chemical protection suits
- Ear protection
- Eye protection (glasses, shields)
- Eye wash kit
- Face shields
- Fall protection (harness)
- Fire extinguisher
- First Aid kits
- Flares
- Goggles
- Hard hat
- Lanyard
- Particle masks
- Reflective shirts, jackets
- Respirators
- Rubber gloves
- Safety vests
- Spill kit
- Traffic cones

STUDENT EQUIPMENT (supplied by student)

- CSA-approved steel-toed footwear
- Calculator
- Hand lens (10x)
- Secateurs
- Work gloves
- Rainwear

3. Instructor Requirements

Occupation Qualification

The instructor must possess:

- Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma
- Teaching competence as demonstrated by successful completion of Provincial Instructor Diploma (PIDP) or equivalent or regular faculty status at an institution which has a defined faculty review process (as specified by institutional policy) or contract faculty who have at least completed the Instructional Skills Workshop (PIDP 3102) or equivalent

Work Experience

- Instructors with the Landscape Horticulture Certificate of Qualification must have a minimum 2 years experience working in the industry as a journeyman, or;
- Credentials for related subject matter competence

LEVEL ONE - ADDITIONAL INSTRUCTOR EXPERTISE

Subject Matter: Plant Identification and Use

Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma or Baccalaureate Degree in Horticulture and 2 years of plant identification experience.

Subject Matter: Communication and Supervision

Subject matter competence as demonstrated by a Business Diploma with Human Resource or Organizational Behaviour specialty or Baccalaureate Degree in with a minor in Business or Certified Landscape Professional. Two years supervisory or management experience in a private or public organization.

Subject Matter: Equipment Operation and Maintenance

Subject matter competence as demonstrated by an Outdoor Power Equipment Trades Qualification/Apprentice Certificate. 5 years of relevant industry experience.

Subject Matter: Plant Science

Subject matter competence as demonstrated by a Baccalaureate Degree in Horticulture, Botany, Agronomy, Plant Biology, Forestry, or Crop Science and/or a Diploma in Horticulture, Agriculture or Forestry with a minimum of 5 years of experience in plant science.

Subject Matter: Analyze and Maintain Plant Health

Subject matter competence as demonstrated by a Horticulture Diploma or Baccalaureate Degree in Horticulture, Agronomy, Forestry, Crop Science, or Pest Management and/or a Diploma in Agriculture or Forestry with a minimum of 5 years of experience in analyzing and maintaining plant health.

Subject Matter: Physical and Biological Characteristics of Soil and Soilless Media

Subject matter competence as demonstrated by a Baccalaureate Degree in Soil Science Horticulture, Agronomy, Forestry, or Crop Science and/or a Diploma in Horticulture, Agriculture or Pest Management with a minimum of 5 years of experience in analyzing physical and biological characteristics of soil and soilless media.

Subject Matter: Practical Horticultural Skills

Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma or Baccalaureate Degree in Horticulture and 2 years of practical landscape or nursery experience

LEVEL TWO - ADDITIONAL INSTRUCTOR EXPERTISE

Subject Matter: Plant Identification and Use

Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma or Baccalaureate Degree in Horticulture and 2 years of plant identification experience.

Subject Matter: Communication and Supervision

Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma or Baccalaureate Degree in with a minor in Business or Certified Landscape Professional. Two years of relevant industry experience.

Subject Matter: Equipment Operation and Maintenance

Subject matter competence as demonstrated by an Outdoor Power Equipment Trades Qualification/Apprentice Certificate or equivalent within Horticulture training or education, with a minimum of 2 years of relevant industry experience.

Subject Matter: Plant Science

Subject matter competence as demonstrated by a Baccalaureate Degree in Horticulture, Botany, Agronomy, Plant Biology, Forestry, or Crop Science and/or a Diploma in Horticulture, Agriculture or Forestry with a minimum 5 years of experience in plant science.

LEVEL TWO - ADDITIONAL INSTRUCTOR EXPERTISE (continued)

Subject Matter: Analyze and Maintain Plant Health

Subject matter competence as demonstrated by a Horticulture Diploma or Baccalaureate Degree in Horticulture, Agronomy, Forestry, Crop Science, or Pest Management and/or a Diploma in Agriculture or Forestry with a minimum of 5 years of experience in analyzing and maintaining plant health.

Subject Matter: Chemical Characteristics of Soil and Soilless Media

Subject matter competence as demonstrated by a Baccalaureate Degree in Soil Science Horticulture, Agronomy, Forestry, or Crop Science and/or a Diploma in Horticulture, Agriculture or Pest Management with a minimum of 5 years of experience in analyzing physical and biological characteristics of soil and soilless media.

Subject Matter: Practical Horticultural Skills

Subject matter competence as demonstrated by a Horticulture Trades Qualification/Apprentice Certificate or Horticulture Diploma or Baccalaureate Degree in Horticulture and 2 years of practical landscape or nursery experience.