LANDSCAPE HORTICULTURE TECHNOLOGY – TECHNICIAN
(LHTN 2021)

Preamble

The Canadian Technology Standards (CTS) are a collection of learning outcomes for Canada's engineering technology and applied science profession at the technician and technologist level.

Stakeholders

The CTS may be utilized by accreditation bodies, provincial professional associations, educational institutions, government agencies, industry and others for the purposes accreditation, certification and other applications.

Educational Programs

The Landscape Horticulture CTS is relevant to programs including, but not limited to, landscape and horticulture at the at the technician level.

Learning Outcomes

This CTS list Discipline Learning Outcomes (DLO) which describe the significant and essential learning that students have achieved and can reliably demonstrate at the time of graduation. Each DLO has a number of Learning Outcome Indicators (LOI), which are examples illustrating, defining and clarifying the level of performance expected. The list of LOI is not comprehensive and there may be other indicators which can be used to assess achievement of learning outcomes.

DLO and their LOI employ only cognitive domain verbs selected from a table of cognitive verbs modeled after a Bloom's cognitive domain table of verbs adapted specifically for engineering technology and applied science disciplines.

Graduate Capability

Students graduating from an accredited program have demonstrated achievement of all general learning outcomes, including a prescribed level of math, and discipline learning outcomes selected by the program.

Having completed a program that is based on applied mathematics and scientific and engineering theory, principles and practices and having acquired the knowledge, skills and attitudes to function in the work place, graduates are;

- able to evaluate assignments, establish objectives, set parameters and determine appropriate procedures and actions.
- able to exercise due diligence in the workplace and adhere to related practices, applicable laws and health and safety practices.
- able to work in accordance with labor-management principles and practices.
- able to work independently or interdependently as part of a discipline or multi-disciplinary team.
- prepared to assume responsibility for their work.

Graduate Career Opportunities

Graduates of Landscape Horticultural Technology - Technician programs will understand design layouts, carry out site work, identify project methods, source materials, prepare cost estimates, and administer technical activities in support of landscape and horticulture projects. They may find employment in careers such as the design, construction, operation/facilities, or maintenance of landscaping and horticulture projects.

Discipline Learning Outcomes (DLOs)

LHTN01   Safety
➤ Demonstrate knowledge of safety regulations and policies to detect potential issues and incidents.

Learning Outcome Indicators include:
1.1   Review Occupational Health and Safety (OH&S) regulations.
1.2   Outline OH&S regulations to crew/sub-contractors.
1.3   Validate crew compliance with OH&S regulations, employer policies, and site-specific procedures.
1.4   Implement appropriate safety procedures.
1.5   Use personal protective equipment (PPE) at all times.
1.6   Implement safety inspections and report.
1.7   Recognize and report unsafe conditions.
1.8   Collaborate with private and public utility locators and emergency response teams.

LHTN02   Environmental Compliance
➤ Apply working knowledge of regulations to minimize environmental issues and accidents.

Learning Outcome Indicators include:
2.1   Review and explain federal/provincial environmental regulations.
2.2   Explain company environmental policy and procedures.
2.3   Monitor surface water drainage.
2.4   Monitor erosion control measures.
2.5   Monitor dangerous chemical use and storage.
2.6   Manage the transport of dangerous materials appropriately.
2.7   Identify site restrictions and challenges by performing site assessments.
2.8   Manage containment and dispose of spill contaminants according to regulations.

LHTN03   Tools and Equipment
➤ Use and maintain equipment and tools of the discipline (trade).

Learning Outcome Indicators include:
3.1   Operate self-propelled equipment properly.
3.2   Implement safety checks and maintenance of equipment for proper operation in accordance with manufacturer's instructions.
3.3   Manage storage and transport of equipment safely.
3.4   Manage maintenance of measuring equipment.
3.5   Manage maintenance of vehicles and motorized equipment.

LHTN04   Soft Landscaping
➢ Plan and organize installation of sod, greenhouse plants, container plants, and field-grown plants.

Learning Outcome Indicators include:
4.1   Review plans and specifications to obtain scope of work.
4.2   Identify utility locations.
4.3   Install softscape features including plants, sod, and mulch ensuring plants selected are placed compliant to soil conditions, required sunlight, seasonal conditions, and interaction of different plant species.
4.4   Review soil analysis of existing soil and fertilization needed to meet soil requirements for softscape design.
4.5   Use equipment and materials according to manufacturer's instructions.
4.6   Manage co-ordination of sub-trades.
4.7   Organize plants, materials, and equipment.
4.8   Manage growing conditions and take corrective measures as needed.
4.9   Inspect and monitor plants for pests and diseases.

LHTN05   Hard Landscaping
➢ Plan and organize installation of paving materials, water features, retaining walls, lighting, and landscape structures.

Learning Outcome Indicators include:
5.1   Perform pre-construction activities.
5.2   Collaborate in the design of basic landscapes.
5.3   Explain landscape plans.
5.4   Manage installation of landscape structures.
5.5   Manage installation of walkways, patios, driveways, and parking lot materials.
5.6   Manage installation of steps and retaining walls.
5.7   Manage installation and maintain irrigation systems and water features.
5.8   Manage installation of low voltage landscape lighting.

LHTN06   Landscape Maintenance
➢ Manage the maintenance of all planted material, water features, and hard/soft landscaping.

Learning Outcome Indicators include:
6.1   Manage maintenance of growing media.
6.2   Manage maintenance of grass and turf.
6.3   Manage maintenance of interior and exterior softscape.

LHTN07   Supervision
➤ Contribute to supervision of landscaping projects.

Learning Outcome Indicators include:
7.1   Collaborate in job planning and estimating activities.
7.2   Plan, organize and implement landscape work.

LHTN08   Project Management
➤ Collaborate in project management operations.

Learning Outcome Indicators include:
8.1   Monitor and report on project issues including timelines and budgets.
8.2   Organize project-related information as instructed.
8.3   Modify schedules based on quality control issues and client changes.

LHTN09   Problem Solving
➤ Identify issues and contribute to finding solutions.

Learning Outcome Indicators include:
9.1   Collect relevant information in execution of landscape work.
9.2   Communicate effectively with stakeholders.
9.3   Develop conflict resolution skills in work situations.
9.4   Collaborate in helping to solve technical problems.

LHTN10   Site Surveys
➤ Collaborate in conducting site surveys and site layouts.

Learning Outcome Indicators include:
10.1   Collaborate in conducting landscape surveys and site layouts.
10.2   Interpret and compile information.
10.3   Collaborate with other professionals.

LHTN11   Estimating and Bidding
➤ Prepare estimates, quantity take-offs, and bidding documents.

Learning Outcome Indicators include:
11.1   Estimate basic material requirements based on plans and specifications.
11.2   Calculate labour and material cost estimates.
11.3   Calculate additional costs such as sub-trades, transportation, safety program, contingencies, accommodations, and overhead charges.
11.4   Communicate with contractors, suppliers, and employees to discuss project logistics.