



8734

INTRODUCTION TO
GREENHOUSE MAINTENANCE
AND PRODUCTION (11C)

30S/30E/30M

A Horticulture Course

8734: INTRODUCTION TO GREENHOUSE MAINTENANCE AND PRODUCTION (11C) 30S/30E/30M

Course Description

This course is intended for students completing the specialization phase of the horticulture program. The curriculum focuses on an introduction to the maintenance and production of crops in a greenhouse. Students are introduced to greenhouse propagation and participate in the functioning of a greenhouse.

Goal 1: Describe and apply appropriate **safety** and **health** practices as they relate to horticulture.

GLO 1.1: Create and maintain a **safe work** environment in horticulture.

- SLO 11C.1.1.1: Describe workplace safety and health procedures (e.g., S.A.F.E., right to refuse). (A3.1)
- SLO 11C.1.1.2: Identify and report hazards (e.g., electrical safety, ergonomics, material handling, chemicals) related to processes, materials, tools, and equipment used in horticulture and landscaping. (A3.7) (D1.2)
- SLO 11C.1.1.3: Outline the safety principles for working on and around electrical equipment. (A3.8) (TSA 18)
- SLO 11C.1.1.4: Follow the directions of the teacher/supervisor in regard to safe work practices.
- SLO 11C.1.1.5: Follow safe practices and procedures for facilities, processes, materials, tools, and equipment used in horticulture and landscaping (e.g., keep work area clean and organized). (A3.3)
- SLO 11C.1.1.6: Describe and use appropriate personal protective equipment (PPE) (e.g., gloves, safety glasses or goggles, hearing protection, respirator mask) and identify PPE and procedures related to PPE. (A3.2) (TSA 16)
- SLO 11C.1.1.7: Locate the first aid and eyewash stations.
- SLO 11C.1.1.8: Identify the process for reporting injuries.
- SLO 11BC.1.1.9: Identify ergonomically correct procedures to avoid injury (e.g., stress, strain, lifting).
- SLO 11C.1.1.10: Identify and outline workplace fire safety principles. (A3.10) (TSA 19)

- SLO 11C.1.1.11: Identify emergency evacuation and response procedures.
- SLO 11C.1.1.12: Identify potential hazards with regard to personal apparel and grooming.
- SLO 11C.1.1.13: Demonstrate awareness of the principles of the Workplace Hazardous Materials Information Systems (WHMIS) as they apply to the horticulture industry and identify safety requirements as they apply to WHMIS. (A3.11) (TSA 13)
- SLO 11C.1.1.14: Describe the purpose of Material Safety Data Sheets (MSDS).
- SLO 11C.1.1.15: Demonstrate knowledge of the need and purpose of safe handling and application of chemical controls according to the label. (A3.4, A3.14)
- SLO 11C.1.1.16: Identify the hazards associated with working in a confined space and the preparation required to work safely in a confined space. (A3.9) (TSA 20)
- SLO 11C.1.1.17: Identify the hazards and precautions related to working with and around horticulture and landscaping equipment, including ladders and scaffolding. (A3.5, A3.6)
- SLO 11C.1.1.18: Identify the need for a safety checklist in the landscaping and horticulture industries (e.g., chainsaw, power lawnmower, garden tractor).
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GLO 1.2: Demonstrate knowledge of the **Trade Safety Awareness Manual** (<www.gov.mb.ca/tce/apprent/apprentice/trade_safety/>).

No applicable SLOs.

Goal 2: Demonstrate the safe and appropriate **maintenance, management, and operation of equipment, tools, consumables, and materials.** (GHCP B3)

GLO 2.1: Demonstrate the safe and appropriate **maintenance and management of equipment, tools, consumables, and materials.**

- SLO 11C.2.1.1: Demonstrate the safe and appropriate maintenance and management of equipment, tools, consumables, and materials used in greenhouse maintenance and production.
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GLO 2.2: Demonstrate the safe **operation of horticultural tools and equipment.**

SLO 11C.2.2.1: Demonstrate the safe operation of horticultural tools and equipment used in greenhouse maintenance and production.

Goal 3: Demonstrate an understanding of the **fundamentals of horticulture.**

GLO 3.1: Demonstrate a basic understanding of **plant anatomy, morphology, and physiology.**

No applicable SLOs.

GLO 3.2: Identify and select plants.

No applicable SLOs.

GLO 3.3: Demonstrate an understanding of **plant care.** (GHCP B2)

No applicable SLOs.

Goal 4: Demonstrate an understanding of **soils and growing media.**

GLO 4.1: Demonstrate an understanding of **soils and growing media.**

No applicable SLOs.

GLO 4.2: Demonstrate knowledge of the **effects of soils and growing media on plants.** (GHCP A7)

SLO 11C.4.2.1: Describe the effects of growing media on plants.

SLO 11C.4.2.2: Analyze the effects of water and nutrient uptake by roots in a greenhouse.

SLO 11C.4.2.3: Analyze atmospheric conditions that influence water availability in a greenhouse, and respond accordingly.

Goal 5: Understand **pest management.**

GLO 5.1: Understand the principles of **integrated pest management.**

SLO 11C.5.1.1: Identify common pests in a greenhouse.

SLO 11C.5.1.2: Identify damage caused by pests in a greenhouse.

SLO 11C.5.1.3: Practise integrated pest management in a greenhouse.

SLO 11C.5.1.4: Differentiate between abiotic and biotic damage to plants in a greenhouse.

Goal 6: Demonstrate an understanding of the principles of **plant installation and propagation.**

GLO 6.1: Demonstrate an understanding of the principles of **plant installation and propagation.**

SLO 11C.6.1.1: Install plant material. (GHCP B1)

SLO 11C.6.1.2: Apply different methods of plant propagation appropriate to a greenhouse.

Goal 7: Demonstrate an understanding of the principles of **crop production and management.**

GLO 7.1: Demonstrate an understanding of **crop production.**

SLO 11C.7.1.1: Apply pre-harvest and post-harvest practices to maximize quality.

SLO 11C.7.1.2: Plan a greenhouse crop.

SLO 11C.7.1.3: Produce greenhouse crops.

GLO 7.2: Demonstrate an understanding of **crop management.**

SLO 11C.7.2.1: Apply practices to improve crop quality.

SLO 11C.7.2.2: Apply cultural practices to maximize crop production.

Goal 8: Demonstrate an understanding of the **construction techniques** relevant to the horticulture industry.

GLO 8.1: Identify and demonstrate different **construction techniques.**

No applicable SLOs.

Goal 9: Understand **career opportunities** in horticulture and related environmental fields. (GHCP D1)

GLO 9.1: Describe **education and career opportunities, and professional organizations** in horticulture and related environmental fields.

SLO 11C.9.1.1: Identify the relationship between journey person and apprenticeship. (A10.2)

Goal 10: Describe and demonstrate the transferable, **cross-curricular** knowledge and skills as they pertain to horticulture.

GLO 10.1: **Read, interpret, and communicate** information relevant to horticulture.

SLO 11C.10.1.1: Use effective personal communication. (A10.4) (GHCP D4)

SLO 11C.10.1.2: Read, understand, and produce written information in different types of workplace documents (e.g., work instructions, emails and memos, health and safety manuals, policies, and reports). (A10.3)

GLO 10.2: Apply **mathematics** knowledge and skills relevant to horticulture.

No applicable SLOs.

GLO 10.3: Apply **other subject areas** (art, physical education/health education) knowledge and skills relevant to horticulture.

No applicable SLOs.

Goal 11: Demonstrate an awareness of **sustainability** as it pertains to horticulture.

GLO 11.1: Describe the impact of **sustainability** on the health and well-being of horticulture workers and their clients, as well as the role of horticulture in society.

No applicable SLOs.

GLO 11.2: Describe the horticulture industry's **sustainability practices and environmental impacts**.

No applicable SLOs.

GLO 11.3: Describe **sustainable business practices** within the horticulture industry.

SLO 11C.11.3.1: Identify the dynamic interrelationship between the environment and the economy.

Goal 12: Demonstrate an awareness of the **ethical and legal standards** as they pertain to horticulture.

GLO 12.1: Apply the **ethical and legal standards** as they pertain to horticulture.

SLO 11C.12.1.1: Describe the ethical and legal expectations related to the greenhouse industry.

Goal 13: Demonstrate **employability skills** related to horticulture. (GHCP D1) (GHCP D4)

GLO 13.1: Demonstrate **fundamental employability skills**.

SLO 11C.13.1.1: Arrive on time and be prepared for work.

SLO 11C.13.1.2: Meet deadlines.

SLO 11C.13.1.3: Use time effectively.

SLO 11C.13.1.4: Follow written and oral directions.

SLO 11C.13.1.5: Ask questions for clarification.

SLO 11C.13.1.6: Initiate work independently.

SLO 11C.13.1.7: Work effectively without supervision.

SLO 11C.13.1.8: Complete tasks without supervision.

SLO 11C.13.1.9: Fulfill commitments to self and others.

SLO 11C.13.1.10: Perform tasks to a high standard.

SLO 11C.13.10.11: Cooperate with others.

SLO 11C.13.10.12: Act respectfully towards oneself and others.

SLO 11C.13.10.13: Participate in group activities.

SLO 11C.13.10.14: Dress appropriately for the workplace.

SLO 11C.13.10.15: Demonstrate appropriate site etiquette. (GHCP D3)

SLO 11C.13.10.16: Maintain a clean and organized work area. (A3.3)

Goal 14: Demonstrate an understanding of the **evolution and technological progression of, and the emerging trends in** horticulture.

GLO 14.1: Demonstrate an understanding of the **evolution and technological progression of, and the emerging trends in** horticulture.

SLO 11C.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the greenhouse industry.
