



8717

EXPLORATION OF
HORTICULTURE (9)

15S/15E/15M

10S/10E/10M

A Horticulture Course

8717: EXPLORATION OF HORTICULTURE (9) 15S/15E/15M AND 10S/10E/10M

Course Description

This is an **optional** half-credit or full-credit course. It is intended for students wishing to get an overview of the horticulture program. The curriculum focuses on an exploration of landscaping, greenhouse maintenance and production, and plant propagation with an emphasis on hands-on, project-based activities.

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 9.1.1.1: Describe workplace safety and health procedures (e.g., S.A.F.E., right to refuse). (A3.1)
- SLO 9.1.1.2: 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 9.1.1.3: Outline the safety principles for working on and around electrical equipment. (A3.8) (TSA 18)
- SLO 9.1.1.4: Follow the directions of the teacher/supervisor in regard to safe work practices.
- SLO 9.1.1.5: 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 9.1.1.6: 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 9.1.1.7: Locate the first aid and eyewash stations.
- SLO 9.1.1.8: Identify the process for reporting injuries.
- SLO 9.1.1.9: Identify ergonomically correct procedures to avoid injury (e.g., stress, strain, lifting).
- SLO 9.1.1.10: Identify and outline workplace fire safety principles. (A3.10) (TSA 19)
- SLO 9.1.1.11: Identify emergency evacuation and response procedures.
- SLO 9.1.1.12: Identify potential hazards with regard to personal apparel and grooming.

- SLO 9.1.1.13: 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 9.1.1.14: Describe the purpose of Material Safety Data Sheets (MSDS).
- SLO 9.1.1.15: Demonstrate knowledge of the need and purpose of safe handling and application of chemical controls according to the label. (A3.4, A3.14)
- SLO 9.1.1.16: 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 9.1.1.17: Identify the hazards and precautions related to working with and around horticulture and landscaping equipment, including ladders and scaffolding. (A3.5, A3.6)
- SLO 9.1.1.18: 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 9.2.1.1: Demonstrate the safe and appropriate maintenance and management of equipment, tools, consumables, and materials
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GLO 2.2: Demonstrate the safe **operation of horticultural tools and equipment.**

- SLO 9.2.2.1: Demonstrate the safe operation of horticultural tools and equipment.
- SLO 9.2.2.2: Demonstrate knowledge of the correct measuring and hand tools, and power equipment for a task.
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Goal 3: Demonstrate an understanding of the fundamentals of horticulture.

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

- SLO 9.3.1.1: Identify plant categories.
 - SLO 9.3.1.2: Identify plant anatomy and morphology. (B2.3)
 - SLO 9.3.1.3: Identify the factors that impact plant growth and development. (B2.2)
 - SLO 9.3.1.4: Identify the functions of a plant as an organism. (B2.4)
 - SLO 9.3.1.5: Define plant science terminology. (B2.1)
 - SLO 9.3.1.6: Define terminology associated with fertilizers. (D1.1)
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GLO 3.2: Identify and select plants.

- SLO 9.3.2.1: Identify a dichotomous key used to classify plants.
 - SLO 9.3.2.2: Identify morphological characteristics of plant families.
 - SLO 9.3.2.3: Identify morphological characteristics of plant genus and species.
 - SLO 9.3.2.4: Identify plants by common and botanical names, and family names. (GHCP A3)
 - SLO 9.3.2.5: Demonstrate knowledge of the International system of Plant Nomenclature (taxonomy).
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GLO 3.3: Demonstrate an understanding of plant care. (GHCP B2)

- SLO 9.3.3.1: Demonstrate knowledge of cultural requirements of plants.
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Goal 4: Demonstrate an understanding of soils and growing media.

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

- SLO 9.4.1.1: Demonstrate knowledge of the physical characteristics that must be considered when determining the suitability for plant growth.
 - SLO 9.4.1.2: Demonstrate knowledge of the types of media, as well as their characteristics and applications.
 - SLO 9.4.1.3: Demonstrate knowledge of soil science terminology.
 - SLO 9.4.1.4: Demonstrate knowledge of the chemical and biological properties of soils and growing media.
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GLO 4.2: Demonstrate knowledge of the **effects of soils and growing media on plants.** (GHCP A7)

No applicable SLOs.

Goal 5: Understand **pest management.**

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

- SLO 9.5.1.1: Demonstrate knowledge of common pests.
 - SLO 9.5.1.2: Demonstrate knowledge of damage caused by pests.
 - SLO 9.5.1.3: Demonstrate knowledge of pest control techniques.
 - SLO 9.5.1.4: Demonstrate knowledge of the difference between Integrated Pest Management (IPM) and conventional pest management.
 - SLO 9.5.1.5: Demonstrate knowledge of pest biology in terms of IPM.
 - SLO 9.5.1.6: Demonstrate knowledge of the ecological concepts related to IPM.
 - SLO 9.5.1.7: Demonstrate knowledge of the significance of pests.
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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 9.6.1.1: Install plant material. (GHCP B1)
 - SLO 9.6.1.2: Demonstrate knowledge of different methods of plant propagation.
 - SLO 9.6.1.3: Demonstrate knowledge of the difference between asexual and sexual propagation.
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Goal 7: Demonstrate an understanding of the principles of **crop production and management.**

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

- SLO 9.7.1.1: Demonstrate knowledge of pre-harvest and post-harvest factors that affect quality.
 - SLO 9.7.1.2: Demonstrate knowledge of the factors involved in planning a greenhouse crop.
 - SLO 9.7.1.3: Demonstrate knowledge of crops suitable for greenhouse production.
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GLO 7.2: Demonstrate an understanding of **crop management**.

SLO 9.7.2.1: Demonstrate knowledge of practices to improve crop quality.

SLO 9.7.2.2: Demonstrate knowledge of cultural requirements that affect 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**.

SLO 9.8.1.1: Demonstrate knowledge of the design components of a landscape plan.

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 9.9.1.1: Describe the structure and scope of horticulture and related environmental fields. (A1.1)

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 9.10.1.1: Identify effective communication practices. (A10.1) (GHCP D4)

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

SLO 9.10.2.1: Use the basic mathematical processes of addition, subtraction, multiplication, and division. (B1.1)

SLO 9.10.2.2: Calculate measurements. (B1.2)

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**.

SLO 9.11.2.1: Demonstrate knowledge of the environmental impact of various horticultural practices. (D1.3) (A5.2)

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

SLO 9.11.3.1: Demonstrate knowledge of the needs of the present world without compromising the ability of future generations to meet their own needs.

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 9.12.1.1: Demonstrate knowledge of the ethical and legal expectations related to the horticulture industry.

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

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

- SLO 9.13.1.1: Arrive on time and be prepared for work.
- SLO 9.13.1.2: Meet deadlines.
- SLO 9.13.1.3: Use time effectively.
- SLO 9.13.1.4: Follow written and oral directions.
- SLO 9.13.1.5: Ask questions for clarification.
- SLO 9.13.1.6: Initiate work independently.
- SLO 9.13.1.7: Work effectively without supervision.
- SLO 9.13.1.8: Complete tasks without supervision.
- SLO 9.13.1.9: Fulfill commitments to self and others.
- SLO 9.13.1.10: Perform tasks to a high standard.
- SLO 9.13.10.11: Cooperate with others.
- SLO 9.13.10.12: Act respectfully towards oneself and others.
- SLO 9.13.10.13: Participate in group activities.
- SLO 9.13.10.14: Dress appropriately for the workplace.
- SLO 9.13.10.15: Demonstrate appropriate site etiquette. (GHCP D3)
- SLO 9.13.10.16: 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 9.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the horticulture industry.
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