Area of Interest: Skilled Trades

Horticultural Industries (Co-op)

Ontario College Diploma
2 Years
Ottawa Campus

Academic Year: 2019/2020
Program Code: 1406X03FWO

Our Program

Transform your appreciation for landscape design into a career in the ever-evolving horticultural industry.

In the two-year Horticultural Industries Ontario College Diploma program you learn how to create landscapes from design to implementation. By offering a condensed format over 16 months, the Horticultural Industries program allows you to fast track your career.

Learn the key aspects of this dynamic industry, including:

- urban and rural landscape design, installation and maintenance
- nursery production and management
- sustainable urban agriculture
- green roof and living wall technology

The various plant collections and the vegetable garden provide you with the perfect opportunity to study plant identification, plant selection and ideal growing conditions. You take active part in further developing and maintaining the grounds in smaller work-groups, simulating the industry.

To further your skills and make connections in the industry, you complete a 12-week co-op placement as part of the program. The landscape industry is fast-paced and constantly evolving, with a high-demand for skilled horticultural specialists and landscape designers.

Graduates may find work, either as employees or self-employed, in:

- construction and maintenance firms
- landscape design
- nurseries and garden centres
- urban food production
- tree care industry
- park systems
- consulting or teaching

You may also choose to continue your education by completing a degree in Landscape Architecture, Horticulture, and Plant Science.

SUCCESS FACTORS

This program is well-suited for students who:

- Place a high personal priority on enhancing the environment.
- Have an affinity for plants.
• Enjoy physical activity and working outdoors.
• Work well in a team environment.
• Are interested in landscape design from conception to implementation.
• Are concerned about the safety of the environment and food source sustainability
• Enjoy problem solving.
• Appreciate working in a professional environment.
• Are able to identify various plants, memorize plant names and ideal growing requirements.

**Employment**

Graduates may find employment in urban food production; nurseries and garden centres; park systems; landscape design, construction and maintenance firms; the tree care industry; sales and service and consulting.

**Learning Outcomes**

The graduate has reliably demonstrated the ability to:

• Design, estimate, install and maintain sustainable and ecologically sound green infrastructures in the urban and rural environments.
• Install and maintain green roofs and living walls.
• Grow food crops employing the principles of sustainable urban agriculture.
• Plan and implement personal, site and equipment safety procedures.
• Complete all work in accordance with professional and industry guidelines.
• Identify, propagate, produce and market plant material.
• Participate in applied research that contributes to the advancement of the urban agriculture, nursery and landscape industries field.
• Manage urban agriculture, nursery and landscape industry projects and small divisions of a business.
• Handle plant material competently, utilizing knowledge of plant culture, anatomy, physiology and integrated pest management practices.
• Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

**Program of Study**

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<tr>
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<th>Courses</th>
<th>Hours</th>
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Fees for the 2019/2020 Academic Year

Tuition and related ancillary fees for this program can be viewed by using the Tuition and Fees Estimator tool at [https://www.algonquincollege.com/fee-estimator](https://www.algonquincollege.com/fee-estimator).

Further information on fees can be found by visiting the Registrar’s Office website at [https://www.algonquincollege.com/ro](https://www.algonquincollege.com/ro).

Fees are subject to change.

Additional program-related expenses include:

Books, software, personal safety equipment and other supplies cost approximately $1,600 for the full program. At the start of each term, students are advised as to what books and software to purchase.

Admission Requirements for the 2020/2021 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent. Applicants with an OSSD showing senior English and/or Mathematics courses at the Basic Level, or with Workplace or Open courses, will be tested to determine their eligibility for admission; OR
- Academic and Career Entrance (ACE) certificate; OR
- General Educational Development (GED) certificate; OR
- Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing for which a fee of $50 (subject to change) will be charged.

Program Eligibility
• English, Grade 12 (ENG4C or equivalent).

• International applicants must provide proof of the subject specific requirements noted above along with proof of either: (IELTS / TOEFL) IELTS-International English Language Testing Service (Academic) Overall band of 6.0 with a minimum of 5.5 in each band; OR TOEFL-Internet-based (iBT) Overall 80, with a minimum of 20 in each component: Reading 20; Listening 20; Speaking 20; Writing 20.

• Applicants with international transcripts must provide proof of the subject specific requirements noted above and may be required to provide proof of language proficiency.

Should the number of qualified applicants exceed the number of available places, applicants will be selected on the basis of their proficiency in English.

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Application Information

HORTICULTURAL INDUSTRIES (CO-OP)
Program Code 1406X03FWO

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:

ontariocolleges.ca
60 Corporate Court
Guelph, Ontario N1G 5J3
1-888-892-2228

Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at http://www.ontariocolleges.ca/.

Applications for Fall Term and Winter Term admission received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available.

International applicants please visit this link for application process information:
Additional Information

Programs at Algonquin College are Bring Your Own Device (BYOD). To see the BYOD requirements for your program, please visit: https://www7.algonquincollege.com/byod/.

Cooperative education (Co-op) allows students to integrate their classroom learning with a real-world experience through paid work terms. Two academic terms prior to the cooperative education work term, students are required to actively participate in and successfully complete the self-directed co-op online readiness activities and in-person workshops.

Students must actively conduct a guided, self-directed job search and are responsible for securing approved program-related paid co-op employment. Students compete for co-op positions alongside students from Algonquin and other Canadian and international colleges and universities. Algonquin College’s Co-op Department provides assistance in developing co-op job opportunities and facilitates the overall process, but does not guarantee that a student will obtain employment in a co-op work term. Co-op students may be required to re-locate to take part in the co-op employment opportunities available in their industry and must cover all associated expenses; e.g., travel, work permits, visa applications, accommodation and all other incurred expenses.

Co-op work terms are typically 14 weeks in duration and are completed during a term when students are not taking courses.

International students enrolled in a co-op program are required by Immigration, Refugees and Citizenship Canada (IRCC) to have a valid co-op work permit prior to commencing their work term. Without this document, International students are not legally eligible to engage in work in Canada that is a mandatory part of an academic program.

For more information, please visit https://www.algonquincollege.com/coop.

Successful completion of all courses, including the mandatory cooperative education (Co-op) Work Term is a requirement for graduation.

For more information, please contact Tommy Wingreen, Program Coordinator, at 613-727-4723 ext. 7138 or wingret@algonquincollege.com, or Steve Neumann at 613-727-4723 ext. 7034 or neumans@algonquincollege.com.

Course Descriptions

CON0007 Hardscape Installation I

Site surveying, grading, drainage and material installation techniques are key elements. Students study the theory of backfill and compaction and installation specifications for various hard surfaces currently used in the industry. Estimation of materials and labour is also an integral part of the course. Safe and efficient operation of all related compaction and stone cutting equipment is practised as students install the hard surface materials on the campus grounds.

Prerequisite(s): none
Corerequisite(s): HOR7032

CON7007 Hardscape Installation II: Theory

To make intelligent and environmentally-sound decisions on material selection, students explore
manufactured and natural material specifications. Students are introduced to the construction of retaining walls, decks, arbors, fences and water features. The load stresses that these construction features are subject to and how they are counteracted through sound engineering specifications is emphasized.

Prerequisite(s): CON0007
Corequisite(s): CON7008

CON7008 Hardscape Installation II: Applied

Utilizing the woodwork construction lab and the indoor hard surface construction lab, students get hands-on experience in working with the various manufactured and natural materials available to meet project specifications. Students gain competency in all of the related hand and power tools utilized currently in the industry.

Prerequisite(s): CON0007
Corequisite(s): CON7007

CON7020 Landscape Installation and Maintenance

Applied skills are essential for employees to be efficient and accurate in the maintenance of ornamentals, turf areas, nurseries and green spaces. Skills in hardscaping installation, living wall and green roof maintenance are covered. Students also receive experience operating related equipment on the campus grounds.

Prerequisite(s): CON7008 and HOR7031
Corequisite(s): CON7018 and HOR7017

ENL1813M Communications I

Communication remains an essential skill sought by employers, regardless of discipline or field of study. Using a practical, vocation-oriented approach, students focus on meeting the requirements of effective communication. Through a combination of lectures, exercises, and independent learning, students practise writing, speaking, reading, listening, locating and documenting information, and using technology to communicate professionally. Students develop and strengthen communication skills that contribute to success in both educational and workplace environments.

Prerequisite(s): none
Corequisite(s): none

ENL1949 Business Communications for Horticulture

Students create a hypothetical horticulture business to serve as a real-life context for a variety of professional communication activities. They learn to write information and promotional materials for both web and print and a variety of job search materials, as well as standard business documents. They also learn how to present their businesses effectively to clients and how to present themselves professionally in job interviews. Students have an opportunity to develop strategies for ongoing personal and professional development.

Prerequisite(s): ENL1813M
Corequisite(s): none

GED1406 General Education Elective

Students choose one course, from a group of general education electives, which meets one of the following five theme requirements: Arts in Society, Civic Life, Social and Cultural Understanding, Personal Understanding, and Science and Technology.

Prerequisite(s): none
Corequisite(s): none
GEN2007M Community Service

Volunteerism not only benefits a community, but it can broaden the world view of the volunteer. Students who give their time and energy to a particular cause, in return, gain an opportunity to reflect on the value of the volunteer in contemporary society. Students consider different types of volunteer settings, trace the history of volunteer organizations, examine the various roles volunteers play within society and reflect on ethical issues.

Prerequisite(s): none
Corerequisite(s): none

GEP1001 Cooperative Education Readiness

Students are guided through a series of activities which prepares them for their co-op job search term. Through a detailed orientation students learn the cooperative education program policies and procedures related to searching and securing a work term opportunity. Students identify their strengths and transferable skills and participate in workshop style sessions that focus on cover letter and resume development, interview techniques and job search strategies. Students learn how to navigate HireAC where employers post cooperative education job opportunities. Students reflect on workplace success, ethics and responsibilities.

Prerequisite(s): none
Corerequisite(s): none

HOR7000 Nursery and Garden Centre Operations I

The propagation and cultivation of nursery stock is a key part of plant production. Students establish a solid foundation in plant nomenclature and hardiness and then learn basic plant anatomy. Elements essential for plant growth, woody plant identification, and culture and pest control are also covered. Pruning of nursery stock and retail handling complete the course. Students apply theory and practise plant identification in the gardens and retail nursery on campus.

Prerequisite(s): none
Corerequisite(s): none

HOR7005 Urban Agriculture I

Students study how to effectively deal with the challenges of producing edible crops in the urban environment. Introduction to the propagation, cultivation and harvesting of edible crops is covered. Selection of suitable seed strains for the local environs, growth monitoring and final evaluation methodologies prepare students for applied research. Students receive hands-on training in the campus food production gardens, as well as through field trips to the related industry sectors.

Prerequisite(s): none
Corerequisite(s): none

HOR7007 Interiorscaping, Living Walls and Green Roofs

Interior plantscaping involves lighting, containers, soils, watering, nutrition and basic interior plantscaping design. Living wall technology and maintenance is explored both theoretically and practically. Visiting functioning installations in green roof technology prepares students to both install and maintain living roofs.

Prerequisite(s): HOR7032
Corerequisite(s): none

HOR7008 Urban Agriculture II

Organic and Bio-Dynamic gardening techniques introduce students to the diversity of plant growth philosophies. Students study what is involved in the preparation and management of soils for organic certification. The value of Community Supported Agriculture (CSA) operations in the local sustainable food chain supply is discussed. Studies of plant characteristics that generate potentially successful crop production in the local environ further the student’s preparation to participate in
applied research. Successful business management practices for these operations are also explored.

Prerequisite(s): HOR7005  
Corerequisite(s): none

**HOR7011 Sustainable Landscape Design I**

Basic Design Theory is essential in the composition of functional and aesthetically pleasing landscapes. Basic design theory includes site analysis, area composition, access flow analysis, functional planning and selection of materials and plant varieties. Students learn how to compose landscapes that accommodate site conditions, client needs and the effects of time and weather on the landscape. Selecting plant species and composing functional and aesthetically pleasing combinations will complete the course. Working with a combination of hand drawing and standard CAD software students learn the foundational skills for producing a functional and aesthetically pleasing design.

Prerequisite(s): HOR7000 and HOR7030  
Corerequisite(s): none

**HOR7014 Co-Op Placement**

Students apply and interview for co-op positions with the program's various industry partners. The work term provides students with the opportunity to consolidate and apply acquired knowledge and skills and further develop their competencies within an industry sector of their choice. This is a unique opportunity to relate to the industry and start their professional networking. Students prepare by developing effective resumes, job search techniques, career plans and practice job interview skills. Students develop personal learning objectives, enhancing their self-directed learning, and conclude the learning outcomes in the final work term report.

Prerequisite(s): CON0007 and CON7007 and CON7008 and HOR7000 and HOR7005 and HOR7030 and HOR7031 and HOR7032  
Corerequisite(s): none

**HOR7019 Urban Agriculture III**

The propagation, cultivation and harvesting of soft fruits and vegetable crops are explored. Students receive hands-on training in the campus food production gardens and complement their growing knowledge of this industry through field trips.

Prerequisite(s): HOR7008  
Corerequisite(s):HOR7029

**HOR7021 Professional Landscape Operations**

Leadership, risk management, sales and marketing, exterior production, strategic planning, human resources management and financial management are important aspects of landscape operations. Students are set on the lifelong path of learning that ensures personal and professional success. Application of theory is achieved through a case study linked to HOR7023, HOR7024 and MGT0091. A case study evaluation is undertaken by an Industry panel.

Prerequisite(s): CON7018 and ENL1949 and HOR7029 and HOR7032 and MKT7009  
Corerequisite(s):HOR7023 and HOR7024 and MGT0091

**HOR7022 Urban Arboriculture Practices**

Utilizing the arborist's certification study guide, students study the following areas of urban arboriculture: winter twig identification, tree anatomy, and physiology, tree/soil relations, water management, nutrition and fertilization techniques, problem diagnosis and management, safe tree pruning and storm damage repair and construction management. Students identify hazardous tree characteristics in the field, as well as apply the principles for tree evaluation set out by the International Society of Arboriculture.
HOR7023 Sustainable Landscape Design II

Students learn to apply client and context-based design in the development of relevant, functional and sustainable landscapes. Students also learn the value of form and spatial composition in creating various aesthetic effects, how to evaluate and select materials and how to develop complex planting plans. The client interview process, design presentation techniques and the research and application of building codes and bylaws are also covered. Students will apply these skills in the production of a detailed, customized plan for a sustainable landscape using a variety of design techniques and standard CAD software.

Prerequisite(s): CON7018 and HOR7011
Corerequisite(s): none

HOR7024 Urban Agriculture IV

Students expand on harvest timing and techniques along with legislation and guidelines for safe food handling and storage. Students learn marketing techniques current to the local area. An introduction to orchard establishment and maintenance familiarizes students with that sector of the industry.

Prerequisite(s): HOR7019
Corerequisite(s): none

HOR7027 Culture and Nature: Changing Perspectives

Students trace the relationship human beings have with the natural world in which they live, and how, over the course of history, that relationship has changed in ways we can observe through art, literature and physical changes in the landscape. The green movement is an expression of current changes in that relationship. Students have an opportunity to reflect on the way human values have affected the natural world and how social change invariably involves changes in the value system.

Prerequisite(s): none
Corerequisite(s): none

HOR7029 Nursery and Garden Centre Operations III

The identification of plant material is a crucial part of Nursery Production and Garden Centre activities. Students continue with the study of trees, shrubs, perennials and annuals. Essential activities of plant handling, merchandising and customer service are addressed in a Garden Centre context. Practical aspects are covered by field trips to Garden Centres and marketing and selling operations in the department nursery.

Prerequisite(s): MKT7009
Corerequisite(s): HOR7019

HOR7030 Landscape Maintenance I: Theory

Landscape maintenance involves the installation and maintenance of turf, planting beds, and herbaceous and woody plant material. Students apply theory and practise plant identification and nomenclature. Students also learn safe purchasing principles that assure the selection and operation of efficient, safe, ergonomic and environmentally safe equipment. Design principles, installation, adjustment and repair of irrigation systems are included. Smart About Salt Certification training is also covered. Students learn about snow and ice removal products, application techniques and equipment operation and maintenance.

Prerequisite(s): none
Corerequisite(s): HOR7031
HOR7031 Landscape Maintenance I: Applied

Group activities include installation and maintenance of turf, planting beds, and herbaceous and woody plant material. Students learn efficient and ergonomically safe use of hand tools and safe operation and maintenance of small engine equipment commonly used in the industry. Students apply theory and practise plant identification and nomenclature during their work in the demonstration gardens.

Prerequisite(s): none
Corerequisite(s): HOR7030 and HOR7032

HOR7032 Horticultural Jobsite Safety

Safety orientation and training include OHSA (Occupational Health and Safety Act), WHMIS (Workplace Hazardous Materials Information System), and jobsite safety and risk. Students learn how corporate safety programs are structured, along with the employee’s roles and responsibilities within those programs. Students must complete the incorporated standard first aid, CPR-C and Working at Heights certification to pass this course.

Prerequisite(s): none
Corerequisite(s): none

HOR7033 Landscape Installation and Maintenance: Theory

Hard surface construction requires sound knowledge of surfacing materials and specifications. Students learn hard surface design specifications. Students also generate construction detail drawings. The theory behind the installation and maintenance of commercial turf, planting beds, herbaceous and woody plants is essential knowledge for green space maintenance. Students practise safe and efficient operation of all related maintenance and installation equipment.

Prerequisite(s): CON7007 and HOR7011 and HOR7030 and HOR7031 and MKT7009
Corerequisite(s): CON7020 and HOR7029

MGT0091 Small Business Management and Entrepreneurship

Setting up and managing divisions within a small business are required as experience is gained in the industry. Some of the topic areas include the legal structure, budgets, government resources, marketing and financial planning. Students also learn how new innovative research can expand or initiate new business opportunities. Practical business skills include developing a business plan, creating a strategic plan based on mission and vision, complying with federal and provincial regulations and managing employees.

Prerequisite(s): ENL1949
Corerequisite(s): HOR7021

MKT7009 Nursery and Garden Centre Operations II

Identification of plant material is a crucial part of Nursery production and Garden Centre activities. Students learn the identification of deciduous plant material from buds and twigs and continue with the study of conifers. Studies in plant physiology, integrated pest management, plant nutrition and fertilizer use, expand the student's knowledge of base for the varied needs of the Nursery and Garden Centre. The propagation of plants in a greenhouse setting is introduced, with emphasis on seed propagation of perennials and annuals. Students visit greenhouse growing operations and engage in practical exercises in the department.

Prerequisite(s): HOR7000
Corerequisite(s): none