

Area of Interest: Construction and Skilled Trades

Horticultural Industries (Co-op)

Ontario College Diploma

Program Code: 1406X03FWO

2 Years

Ottawa Campus

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 program offers a hands-on learning experience during the industry's prime production period in the spring/summer/fall. Practise skills in Algonquin College's extensive campus gardens surrounding the Horticulture Centre and within the attached greenhouse complex.

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.

Students also gain real-world experience through a paid co-operative education (co-op) work term (s) (see Additional Information for more details). Please note that places in the co-op work term(s) are subject to availability and academic eligibility. Please note admission to a co-op program does not guarantee a co-op placement.

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

Most industry jobs are seasonal (April to November), but many nurseries keep employees on in the winter.

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

Level: 01	Courses	Hours
CON0007	Hardscape Installation I	42.0
ENL1813T	Communications I	42.0

GED2012	Achieving Success in the 21st Century	42.0
GEP1001	Cooperative Education and Job Readiness	18.0
HOR7000	Nursery and Garden Centre Operations I	56.0
HOR7005	Urban Agriculture I	42.0
HOR7030	Landscape Maintenance I: Theory	56.0
HOR7031	Landscape Maintenance I: Applied	56.0
HOR7032	Horticultural Jobsite Safety	35.0
Level: 02	Courses	Hours
CON7007	Hardscape Installation II: Theory	24.0
CON7008	Hardscape Installation II: Applied	48.0
ENL1949	Business Communications for Horticulture	42.0
HOR7007	Interiorscaping,Living Walls and Green Roofs	48.0
HOR7008	Urban Agriculture II	36.0
HOR7011	Sustainable Landscape Design I	84.0
MKT7009	Nursery and Garden Centre Operations II	48.0
Choose one from equivalencies:	Courses	Hours
GED1406	General Education Elective	42.0
Co-op: 01	Courses	Hours
HOR7014	Co-Op Placement	
Level: 03	Courses	Hours
CON7020	Landscape Installation and Maintenance: Applied	144.0
GEN2007M	Community Service	42.0
HOR7019	Urban Agriculture III	48.0
HOR7029	Nursery and Garden Centre Operations III	36.0
HOR7033	Landscape Installation and Maintenance: Theory	24.0
Level: 04	Courses	Hours
HOR7021	Professional Landscape Operations	50.0
HOR7022	Urban Arboriculture Practices	50.0
HOR7023	Sustainable Landscape Design II	90.0
HOR7024	Urban Agriculture IV	30.0
MGT0091	Small Business Management and Entrepreneurship	40.0

Fees for the 2023/2024 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> .

Further information on fees can be found by visiting the Registrar's Office website at <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 2024/2025 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)
- Applicants with international transcripts must provide proof of the subject-specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).
- 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; **OR** Duolingo English Test (DET) Overall 110, minimum of 110 in Literacy and no score below 95.

Not sure if you meet all of the requirements? Academic Upgrading may be able to help with that: <https://www.algonquincollege.com/access/> .

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: <https://algonquincollege.force.com/myACint/> .

For further information on the admissions process, contact:

Registrar`s Office
Algonquin College
1385 Woodroffe Ave
Ottawa, ON K2G 1V8
Telephone: 613-727-0002
Toll-free: 1-800-565-4723
TTY: 613-727-7766
Fax: 613-727-7632
Contact: <https://www.algonquincollege.com/ro>

Additional Information

CO-OP INFORMATION:

Co-operative 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 course, readiness activities and 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 College and other Canadian and international colleges and universities. Algonquin College`s Co-op Department provides assistance in developing co-op job opportunities and guides 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 relocate 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. For more information on your program's co-op level(s), visit the courses tab on your program's webpage.

International students enrolled in a co-op program are required by Immigration, Refugees and Citizenship Canada (IRCC) to have a valid Co-op/Internship 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 part of an academic program. The Co-op/Internship Work Permit does not authorize international students to work outside the requirements of their academic program.

For more information on co-op programs, the co-op work/study schedule, as well as general and program-specific co-op eligibility criteria, please visit www.algonquincollege.com/coop.

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

Contact Information

Program Coordinator(s)

- Steve Neumann, <mailto:neumanns@algonquincollege.com> , 613-727-4723, ext. 7034
- Tommy Wingreen, <mailto:wingret@algonquincollege.com> , 613-727-4723, ext. 7138

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
Corerequisite(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
Corerequisite(s):CON7007

CON7020 Landscape Installation and Maintenance: Applied

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
Corerequisite(s):HOR7033

ENL1813T 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
Corerequisite(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): ENL1813T
Corerequisite(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
Corerequisite(s):none

GED2012 Achieving Success in the 21st Century

Rapid changes in technology have created new employment and business opportunities that challenge each of us to find our place as citizens in the emerging society. Life in the 21st century presents significant opportunities, creates potential hazards and demands that we face new responsibilities in ethical ways. Students explore the possibilities ahead, assess their own aptitudes and strengths, and apply critical thinking and decision-making tools to help resolve some of the important issues present in our complex society with its competing interests.

Prerequisite(s): none
Corerequisite(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 and Job Readiness

Students are guided through a series of activities that prepare them to conduct a professional job search and succeed in the workplace. 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 a web-based resource centre, which is used to post employment and 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

Corequisite(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 GEP1001 and HOR7000 and HOR7005 and HOR7030 and HOR7031 and HOR7032

Corequisite(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

Corequisite(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): ENL1949 and HOR7029 and HOR7032 and HOR7033 and MKT7009

Corequisite(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.

Prerequisite(s): HOR7029

Corequisite(s):none

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 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): HOR7011 and HOR7033
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

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 OSHA (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 MKT7009

Corerequisite(s):CON7020

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