

Area of Interest: Environmental and Applied Sciences

Forestry Technician

Ontario College Diploma

Program Code: 0108X04FPM

45 Weeks

Pembroke Campus

Our Program

Share your passion for the outdoors while conserving our forests, now and into the future!

This accelerated two-year Forestry Technician Ontario College Diploma program, delivered over three academic periods (semesters), is the most hands-on and field-oriented program of its kind in Ontario. It prepares students in the implementation and influence of best practices in forest management in an ecological, environmental and social context. Students gain experience and skills alongside representatives of forest industry, sustainable forest license holders, private woodlot owners and government organizations at all levels.

Gain experience in the planning, execution and monitoring of forest, environment, ecosystem and wildlife management activities. Learn skills to help steward our forests through issues such as species at risk, forest invasives, and climate change.

Spend a significant amount of class time outdoors, exploring a variety of landscapes such as forests, parks and private woodlots. Practice collecting, compiling and analyzing forest resource data while learning to make recommendations to ensure our forests are kept healthy.

Benefit from the opportunity to earn a minimum of 10 industry certifications. These are customizable and give you an advantage entering the workforce.

In third semester, complete an 80-hour field placement. This gives you the opportunity to practice new skills in a real work setting while expanding your network of contacts.

With a Forestry Technician diploma, graduates may find entry-level work in the fields of:

- tree marking
- wildland fire fighting
- ecosystem, wildlife, and species at risk assessment
- tree planting and forest renewal
- sustainable forest harvesting
- parks management
- nature interpretation
- arboriculture
- bio-energy management

Employment

Graduates are well prepared to enter the workforce or to further their studies through university or the natural resources law enforcement (conservation officer) program. Geographic mobility is usually a prerequisite to employment with forestry companies, governments, private woodlot owners, hydro, municipalities, conservation authorities or resource consultants. Graduates may find entry-level work in the fields of tree marking, forest inventory, forest environment and ecosystem assessment, compliance monitoring, forest renewal, harvesting, parks, wildlife management, nature

interpretation, arboriculture, bio-energy management and forest fire control. Self-employment as a forestry contractor or consultant is another avenue graduates may decide to pursue.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Conduct forest inventory surveys and field measurements to determine forest resources and values in forests and woodlots.
- Assess soil characteristics, vegetation and wildlife habitats to identify their interactions within forest ecosystems.
- Perform technical functions in silvicultural operations and assist in the monitoring and evaluation of the effectiveness of silvicultural practices.
- Collect, analyze, interpret, and display spatial data using mapping technology and Geographical Information Systems (GIS) to contribute to forest resource management.
- Contribute to sustainable forest management plans, including conservation and rehabilitation measures, taking into consideration the perspectives of a variety of stakeholders and the requirements of relevant legislation and regulations.
- Identify and analyze forest diseases, pests, invasive species and other disturbance events and implement mitigation strategies to maintain and improve forest ecosystems.
- Select, operate, troubleshoot and maintain tools and equipment in a variety of environmental conditions and in accordance with safety and operating standards.
- Work independently and in a collaborative environment while applying effective teamwork, leadership and interpersonal skills.
- Communicate technical information to a variety of stakeholders in oral, written, visual and electronic forms.
- Develop strategies for ongoing professional development to enhance work performance in the forestry sector.
- 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
DAT7670	Computer Applications	28.0
ENL7777	Communications I	42.0
FOR7310	The Forest Environment	56.0
FOR7311	Dendrology	56.0
FOR7312	Ecology	56.0
FOR7314	Soils and Landforms	42.0
FOR7316	Wildlife	56.0
FOR7317	Remote Sensing	56.0
FOR7322	Forest Health	42.0
Level: 02	Courses	Hours

ENL7679	Communications for Forestry Technicians	42.0
FOR7313	Geographic Information Systems	60.0
FOR7321	Forest Measurements	49.0
FOR7324	Silviculture	64.0
FOR7325	Harvesting	49.0
FOR7327	Fire Management	56.0
FOR7351	Parks Operation	42.0
Choose one from equivalencies: Courses		Hours
GED1108	General Education Elective	42.0
Level: 03	Courses	Hours
FOR7039	Certifications	30.0
FOR7331	Land Stewardship	42.0
FOR7333	Forest Access	42.0
FOR7334	Forest Management	84.0
FOR7335	Ecological Land Classification	36.0
FOR7337	Tree Marking	42.0
FOR7346	Advanced Spatial Techniques	42.0
FOR7347	Freshwater Environments	42.0
FOR7348	Silvicultural Surveys	42.0
FOR7352	Field Placement	80.0

Fees for the 2025/2026 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/ro/pay/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, supplies, and personal protective equipment cost approximately \$1000.00 during the program.
- As part of a two-week certification period in the final level, fees for certification courses are assessed separately and are announced early in the program. Note: There is an ability to complete the certification course at no cost. The certifications are offered through external providers, prices can range from \$0 to \$900.00 or higher. These costs are not included in College Ancillary fees.
- Due to the nature of your program, you are required to participate in learning that takes place throughout the diverse forests of the Ottawa Valley including trips to the Petawawa

- Due to the nature of your program, you are required to participate in learning that takes place throughout the diverse forests of the Ottawa Valley including trips to the Petawawa Research Forest, a nationally recognized centre of excellence for forestry research. Students are expected to make their own way to sites within the City of Pembroke. However, for more distant, off campus locations, where parking is unsafe, unavailable or limited, bus transportation is required. For your purchase convenience, a Forestry Technician student term bus pass is available for purchase in the Campus Proud shop at the following rates (based on required use): Fall \$275, Winter \$175, Spring \$385.

Admission Requirements for the 2026/2027 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent;
- 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 will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent).
- Mathematics, Grade 11 (MCF3M 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 (DET) - Overall 110, minimums of 110 in Literacy and 95 in Production

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

A current Standard First Aid and CPR certificate is preferred prior to registration. Otherwise, the student must obtain the certificate within the first two months of the first level. Applicants must sign and submit a Forestry Technician Program Assumption of Risk and Indemnifying Release Form.

Admission Requirements for 2025/2026 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 will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent).
- Mathematics, Grade 11 (MCF3M 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.

- 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 (DET) - Overall 110, minimums of 110 in Literacy and 95 in Production

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

A current Standard First Aid and CPR certificate is preferred prior to registration. Otherwise, the student must obtain the certificate within the first two months of the first level. Applicants must sign and submit a Forestry Technician Program Assumption of Risk and Indemnifying Release Form.

Application Information

FORESTRY TECHNICIAN Program Code 0108X04FPM

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

<https://www.ontariocolleges.ca/en>

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 <https://www.ontariocolleges.ca/en>

Applications for Fall Term and Winter Term 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 applying from out-of-country can obtain the International Student Application Form at <https://algonquincollege.my.site.com/myac360/s/self-registration-page> or by contacting the Registrar's Office.

For further information on the admissions process, contact:

Registrar's Office
Algonquin College in the Ottawa Valley
1 College Way
Pembroke, ON K8A0C8
Local: 613-735-4700
Toll-free 1-800-565-4723
TTY: 1-866-620-3845
Fax: 613-735-4739
<https://www.algonquincollege.com/pembroke/>

Additional Information

In order to prepare our graduates to be the best in their field, we believe the educational environment must closely resemble the work environment, including the associated risks. Risk, therefore, is an inherent part of the educational environment.

A total of two weeks is spent on placement in a resource-oriented organization chosen by the student, anywhere in the world. Should the opportunity arise, the student may choose instead to partake in an applied forestry research project supervised by the college and/or one of its partners.

Students contemplating taking Forestry at a university should seriously consider our program first,

as we provide a one year, hands-on, practical, field-oriented program. Our articulation agreements with Lakehead University and the University of New Brunswick allows you to enter their Forestry or Forest Conservation programs in the second or third year.

Applicants who participated in the Specialist High Skills Major - Forestry and/or Environment may be eligible for exemptions, in whole or in part, for some of the Forestry Technician courses. Applicants should bring documents to the program coordinator for review, particularly co-op placement and industry certifications.

Contact Information

Program Coordinator(s)

- Peter Arbour, <mailto:arbourp@algonquincollege.com> , 613-735-4700, ext. 2738

Course Descriptions

DAT7670 Computer Applications

The ability to communicate effectively using technology is essential in the education and employment fields. Students develop and apply college and workplace specific computer skills, and become familiar with e-learning resources. Email, word processing, internet searches and interaction with web-based tools relevant to the industry are practised. The effective use of presentation software and the visualization of data using both spreadsheets and graphics are key areas of focus.

Prerequisite(s): none

Corerequisite(s):none

ENL7679 Communications for Forestry Technicians

Forestry Technicians need to communicate well in order to effectively gain employment and work well with colleagues and stakeholders. Topics include written and oral reports; correspondence; technical writing style; resumes; locating, evaluating, and documenting technical information; interpreting and using visuals; and other communication skills that forestry technicians require in today's workplace. Through in-class discussions, debates, report writings, and workplace scenario interpretations, students develop workplace communication skills.

Prerequisite(s): ENL7777

Corerequisite(s):none

ENL7777 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

FOR7039 Certifications

Certifications give graduates a competitive edge in the workforce. Students complete ten certifications in forestry-related specialties, chosen from a suggested list or proposed by students and approved by faculty. In this pass-fail course, students acquire their desired certifications along their professional interests in a forestry context. Throughout the program, certifications can be attained within existing coursework or through extracurricular courses. Others may be organized by the college where sufficient interest exists. Students finalize their certifications in this course.

Prerequisite(s): none

Corerequisite(s):none

FOR7310 The Forest Environment

It is essential for Forestry Technicians to be able to navigate, quantify and interpret the forest in order to stay safe and accomplish tasks effectively. Students practise the basic skills required in forestry throughout Canada. Students interpret and determine areas, coordinates, compass directions and distances from basemaps, topographic maps, and Forest Resource Inventory maps and apply this information in the field. Field inventories are conducted using equipment to determine a tree's age, basal area, diameter, height and location. Students tally and complete a variety of surveys. Through map reading and applied field inventory activities, students gather data to develop a broad awareness of the forest environment and its attributes.

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

FOR7311 Dendrology

Tree identification is foundational to understanding, interpreting and managing forests. Focus is placed on the identification of local forest vegetation in the summer and winter conditions by leaf, twig, bark, log and form. Students study the Ontario Species Code. The environmental requirements of the major shrub and tree species are introduced, as well as tree taxonomy. Through applied activities in the field, students develop the ability to identify Great Lakes - St. Lawrence (GLSL) tree species in both leaf on and leaf off conditions.

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

FOR7312 Ecology

Knowing the auto-ecology of tree species forms an underpinning to good forest management. Students examine the silvics of tree species, which deals with the growth and development of single trees and of forests, in their natural environments. Awareness is gained in the dynamics and succession of forest ecosystems and how they respond to changes in their landscape. Through in-field and classroom exercises, quizzes, tours and labs, students gain a broader understanding of how trees function in a forested setting.

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

FOR7313 Geographic Information Systems

GIS is a very powerful tool that allows capture and analysis of all aspects of modern forestry. Analysis of digitized spatial data is presented. With a mix of in-class and computer lab activities, students practise basic skills in manipulating and presenting data with emphasis on applications in natural resources management. ArcGIS software package is used.

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

FOR7314 Soils and Landforms

Soils form part of the basis for good growth in forests. The need to keep soils healthy through forest activities is vital. The characteristics of common soils with emphasis on the physical, chemical and biological features are explored. Students spend a portion of their time conducting field and lab exercises to examine soil textures and profiles, and the correlation between landforms, soil types and species. Soil fertility, conservation and management are examined.

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

FOR7316 Wildlife

Good stewardship of the forest requires best management of all wildlife, including species at risk. Students practice identification of various species of wildlife. Special emphasis is placed on the identification and management of forest hawk habitat and species at risk. The management of fur bearing and ungulate populations and its habitat are covered. Field surveys are conducted to assess wildlife habitat. Guidelines for the protection of wildlife habitat are examined. Field exercises are conducted to install buffers that protect wildlife habitat from forest operations. Other topics include radio telemetry. Through applied in-class and field activities, students conduct surveys, locate specimen signs and delineate habitat requirements for wildlife species.

Prerequisite(s): none

Corerequisite(s):none

FOR7317 Remote Sensing

Remote sensing allows forest practitioners to accurately interpret forests at a landscape level. Students are introduced to remote sensing using historical and modern forest imaging techniques such as LiDAR, Multispectral and Landsat. In-class focus is placed on interpretation of local digital Forest Resource Inventories. Students develop interpretation skills for identifying tree species, landforms, natural features and man-made features by applying their ground based knowledge to imagery products. Field exercises allow students to use remote sensing to navigate in the forest and to conduct ground-truth exercises.

Prerequisite(s): none

Corerequisite(s):none

FOR7321 Forest Measurements

Forest measurement data forms the basis for good short and long term decision making in our forests. Students determine the growth and yield of trees and forest stands. Emphasis is placed on methods and techniques of various forest inventories, compiling tallies, analysis of data and auditing of work. Students learn about the essential parts of a contract and appreciate how a bid is conducted. Students also develop contracts and bid proposals. Students collect data through field exercises. Students compile and report on this data through classroom assignments.

Prerequisite(s): none

Corerequisite(s):none

FOR7322 Forest Health

Understanding pests and disease is essential to keeping forests healthy. Focus is placed on the identification and management of diseases and insects that affect forest trees. Trees are graded for their potential as growing stock. Tree cavities are also studied. Several field trips are used to place special emphasis on the study of tree defects for selection tree marking. Logging techniques to minimize damage to residual trees are also discussed both in-class and in-field.

Prerequisite(s): none

Corerequisite(s):none

FOR7324 Silviculture

Silviculture connects the silvics of tree species and land base objectives to allow for sustainable forest management. Students study silvicultural systems, site preparation, reforestation, tending, thinning and vegetation control. Emphasis is placed on a good understanding of the selection and shelterwood silviculture systems. Students practise making recommendations concerning silvicultural treatments to contribute to the development of forest operations prescriptions. Several field exercises help students comprehend the course material. Through field activities students gain experience in brushsaw operations, stand analysis of tolerant hardwood forest, tree planting, inspection of areas harvested with the shelterwood system.

Prerequisite(s): none

Corerequisite(s):none

FOR7325 Harvesting

Harvesting is a foundational silvicultural tool that allows for best management on a long-term basis. Students explore regulations, licenses, harvesting equipment, methods, processes, and the use of different silvicultural systems. Students study careful logging and compliance monitoring in detail, practise planning, scheduling and the costing of harvest operations. Through site visits to locations such as active harvest operation locations and mills, students develop an understanding of logging operations processes.

Prerequisite(s): none

Corerequisite(s):none

FOR7327 Fire Management

It is important to understand both the benefit and hazard that forest fires create to protect forests and emulate their natural systems. Students develop an understanding of the organizational structures and practices used to control forest fires. Initial attack procedures are studied. The use of prescribed fire as a forest management tool is explored. Students gain an understanding of the Canadian Forest Fire Danger Rating System. Forest industry involvement to assess fire danger and perform compliance inspections of fire equipment is also covered. Field exercises involving the use of fire pumps and hose, enhance student learning. Note: A testing fee is charged to those students attempting the optional SP102 Forest Industry Fire Certification. Depending on the level of student interest, the optional SP100 Forest Fire Training is also offered for an additional fee and time commitment.

Prerequisite(s): none

Corerequisite(s):none

FOR7331 Land Stewardship

Private woodlots require a different approach to forest management in comparison to publicly owned land due to their different uses and land-owner objectives. In this course, students are able to see in depth how private woodlots are managed in comparison to public forests. Students examine strategies to maintain or enhance natural environments and to remediate disturbed lands. Non-timber forest products are explored. The Managed Forest Tax Incentive Program is examined and applied. Through extensive and in-depth field analysis, students develop best management practices of natural resources on privately owned lands.

Prerequisite(s): none

Corerequisite(s):none

FOR7333 Forest Access

Careful forest access ensures that we can manage our forests with a light environmental footprint. The proper locating of various types of forest access roads and trails is considered. Bridge and culvert sizing, installation and soil erosion control are assessed. Regulatory and aesthetic requirements are applied along with the scheduling and costing of access routes. Compliance monitoring is studied and conducted in the field. Through applied in-class and field activities students gain a critical understanding of responsible forest access.

Prerequisite(s): none

Corerequisite(s):none

FOR7334 Forest Management

Good stewardship of forests requires monitoring and management over long time frames. Students apply knowledge from previous courses to the realistic preparation of parts of a sustainable Forest Management Plan, and also complete part of an Annual Work Schedule. Provincial statutes, regulations, policies and operational planning are examined. Through in-class and field activities, students incorporate all aspects of forestry into long term sustainable forest stewardship.

Prerequisite(s): none

Corerequisite(s):none

FOR7335 Ecological Land Classification

A standardized and consistent ecosystem inventory is needed by resource managers and planners to manage the daily operations of forests. Students use the Canadian Ecological Land Classification and the Ontario Forest Resources Inventory calibration plot systems to assess forest stands at the ecosite level. Through field trips to local Ontario ecosystems, student practise identifying and interpreting ecosites using Ecological Land Classification dichotomous keys.

Prerequisite(s): none

Corerequisite(s):none

FOR7337 Tree Marking

Tree marking is essential for placing forest stands on well managed trajectories and supports their long-term health. Students are introduced to the standards of the Provincial Tree Marking Certification program. Students apply species identification, tree silvics and marking standards to select trees for removal and retention. Through field trips and applied activities, students gain experience and skills to mark trees under various silvicultural systems. Note: Knowledge and experience gained in this course can be applied towards the Ontario Provincial Tree Making certification.

Prerequisite(s): none

Corerequisite(s):none

FOR7346 Advanced Spatial Techniques

Global positioning systems are a critical tool for data collection and navigation in forestry. Students collect field information with various GPS units and download the information into GIS software to produce finished mapping projects. Students practise using professional grade GIS technologies, such as Arc Field Maps and ArcGIS Pro. Using a combination of field exercises and self-directed projects, students explore the spatial relationships of GIS using global positioning systems.

Prerequisite(s): none

Corerequisite(s):none

FOR7347 Freshwater Environments

Stewardship of hydrological environments is vital for the health of the planet. The physical, chemical and biological characteristics of freshwater environments are presented. Students specifically gain an understanding of the ecological importance of lakes, rivers, streams and wetlands. Several field trips are intended to familiarize students with freshwater systems and to provide practical training in an array of aquatic sampling techniques. Protocols for collecting, identifying, analyzing, storing and transporting aquatic samples are practised.

Prerequisite(s): none

Corerequisite(s):none

FOR7348 Silvicultural Surveys

Surveys are an essential tool to verify the success of silvicultural operations and ensure forest sustainability. Focusing on the performance of regeneration assessments, students gain proficiency in required field procedures, such as planning a variety of silvicultural assessments, statistically analyzing the results, and developing treatment options. Students examine forest herbicides and their specific uses in managing forest health. Through field exercises, students apply survey methods and systems to gain insight into the dynamics of forest environments.

Prerequisite(s): none

Corerequisite(s):none

FOR7351 Parks Operation

Managing and governing parks for recreational use through responsible stewardship is vital to Park longevity and people's well-being. Students are introduced to a number of major park systems and

the agencies that operate and manage them in Ontario. Students gain knowledge in park policy and procedures, operations management, customer service, human relations and enforcement. Students experience guest lectures from managers of Provincial Parks, complete projects relative to managing a Park, and are able to complete a number of online certificates.

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

FOR7352 Field Placement

A field placement provides students with valuable experiential learning opportunities in the Forestry industry by applying skills in a workplace setting and networking with professionals. Students research, identify and contact Forestry related operations to secure an approved 80 hour, unpaid field placement. Under the supervision and direction of the host organization, students shadow industry professionals and apply skills developed throughout their program. Through job shadowing activities, self-evaluation and reflection, students gain real-world experience in the Forestry profession and insight into potential career paths. Note: Employers may require a variety of certifications such as CPR First Aid, WHMIS, and Worker Health and Safety Awareness. It is the student's responsibility to have the appropriate certifications.

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

GED1108 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 & Technology.

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