

Area of Interest: Construction and Skilled Trades

Heritage Carpentry and Joinery

Ontario College Diploma

Program Code: 0530X01FPT

2 Year

Perth Campus

Our Program

A program that rises above - pursue a career restoring the past for future generations.

The two-year Heritage Carpentry and Joinery Ontario College Diploma program provides you with skills and knowledge related to the preservation, renovation and restoration of historical architecture. Through theoretical and hands-on learning, you study various topics, including:

- traditional joinery
- timber framing
- log building
- carpentry techniques
- architectural millwork
- staircasing
- window and door repair

Absorb the traditions of old-world craftsmanship through both theory and practice. Experience more than 950 hours of hands-on learning during the program.

You graduate with skills that set you apart from graduates of other carpentry programs. Algonquin College's program places an emphasis on wood as a material and the role of buildings and their architectural components. You construct buildings and building components from locally-harvested and market-sourced lumber and timber. The crafting of these projects from beginning to end provides an engaging and satisfying educational experience.

Upon graduation, you are ready to work in heritage carpentry, and in the high-end custom carpentry and millwork industries. Opportunities are available in both private and public sectors.

Some graduates may prefer freelance work, while others will take positions in commercial or residential carpentry or millwork companies, or follow the traditional apprenticeship route.

This program is well-suited for students who:

Employment

Graduates are prepared to produce the high-quality work demanded in the growing field of Heritage Carpentry, as well as the custom carpentry and millwork industries. Opportunities are available in both private and public sectors. Some graduates may prefer freelance work while others will take positions in commercial or residential carpentry or millworking-companies. Those who decide to follow a traditional apprenticeship route find themselves in an advantageous position as a graduate due to the unique foundation of skills and knowledge acquired.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Develop and use strategies for ongoing professional development to remain current with

- Develop and use strategies for ongoing professional development to remain current with industry changes, enhance work performance and explore career opportunities
- Comply with health and safety practices and procedures in accordance with current legislation and regulations
- Apply conservation techniques in accordance with the Ontario and National Building Codes, and in adherence to the Standards and Guidelines for the Conservation of Historic Places in Canada.
- Communicate and collaborate with diverse clients, supervisors, coworkers and tradespersons to complete projects on time and to maintain effective working relationships.
- Solve problems related to the implementation of built heritage, joinery and millwork artifacts and custom carpentry projects by applying the principles of basic technical mathematics and building design.
- Research, select, maintain and safely use hand tools, power tools and materials when performing traditional and contemporary carpentry, joinery and millwork craft.
- Research and record architectural elements to support and communicate accurate and appropriate historical representations of built heritage.
- Monitor the progression of built heritage, custom carpentry and millwork projects by applying basic principles and strategies of project management and conservation.
- Apply basic business principles and strategies to the operation of a building construction and/or renovation enterprise.
- Perform duties using specialized skillset related to carpentry and joinery in the fields of heritage conservation, high quality residential building and timber frame and log construction.
- 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
ARC9005	Canadian Architectural Conservation	42.0
CON9111	Carpentry: Foundations, Floors, Walls and Basic Roofs	84.0
DRA9113	Drafting for Carpentry and Joinery	28.0
ENL9212	Communications I	42.0
MAT9116	Mathematics for Carpentry and Joinery	28.0
WOO9254	Joinery Fundamentals	112.0
Level: 02	Courses	Hours
WOO9216	Blueprints, Wood, and Geometry	28.0
WOO9226	Joinery: Architectural Millwork	84.0
WOO9228	Carpentry: Roofs and Finishes	154.0
Choose one from equivalencies:	Courses	Hours
GED0530	General Education Elective	42.0

Level: 03	Courses	Hours
BSC9100	Housing, Energy and the Environment	42.0
ENL9202	Communications II	42.0
WOO9303	Traditional Carpentry: Timber Framing	70.0
WOO9306	Traditional Joinery: Doors and Windows	168.0
Level: 04	Courses	Hours
BSC9400	Conservation Methods: Buildings, Carpentry and Planning	56.0
LFS9441	Site Work	20.0
WOO9401	Culminating Architectural Millwork Project	70.0
WOO9402	Traditional Carpentry: Log Building	56.0
WOO9403	Traditional Joinery: Staircasing and Ornamental Millwork	126.0

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 <http://www.algonquincollege.com/fee-estimator>

Further information on fees can be found by visiting the Registrar's Office website at <http://www.algonquincollege.com/ro>

Fees are subject to change.

Additional program related expenses include:

- Books and academic supplies cost approximately \$1000 in the first year and \$400 in the second year.
- In addition, students are required to purchase trade-specific personal protective equipment and tools at a cost of \$800-\$1500 in the first year and \$300-\$500 in the second year.
- Students are advised not to purchase tools before attending class. Students are required to have safety footwear and eye and ear protection on the first day of classes.

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).

- Mathematics, Grade 12 (MAP4C 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.

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.

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Application Information

HERITAGE CARPENTRY AND JOINERY Program Code 0530X01FPT

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 applying from out-of-country can obtain the International Student Application Form at <https://algonquincollege.force.com/myACint/> or by contacting the Registrar's Office.

For further information on the admissions process, contact:

Registrar's Office
Algonquin College Heritage Institute
7 Craig Street
Perth, ON K7H 1X7
Local: 613-267-2859
Toll-free: 1-800-565-4723
TTY: 1-866-620-3845
Fax: 613-267-3950

<http://www.algonquincollege.com/perth>

Additional Information

Part-time students may be considered if space is available.

The Heritage Carpentry and Joinery program is a physically demanding program of study. Students can expect to spend extended blocks of time in both shop and outdoor environments with controlled exposure to noise and dust.

Contact Information

Program Coordinator(s)

- Darren Taubman, <mailto:taubmad@algonquincollege.com> , 613-267-2859

Course Descriptions

ARC9005 Canadian Architectural Conservation

Preserving our heritage resources is a sign of community pride and environmental responsibility. Protecting heritage buildings requires understanding of their histories and the principles of preservation, restoration and rehabilitation shared by the conservation community. Students explore building styles and traditional building techniques as they have evolved across the Canadian landscape, using historical documents, case studies and field trips to local built heritage sites.

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

BSC9100 Housing, Energy and the Environment

Students examine the impact of the construction/historic conservation industry on the environment. This includes a study of the principles and techniques of new house construction, energy-efficiency, appropriate energy conservation methods for historic buildings, the improvement of indoor air quality and the selection of environmentally-responsible construction products and practices.

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

BSC9400 Conservation Methods: Buildings, Carpentry and Planning

Students learn about restoration and repair techniques for buildings and building elements. By exploring a variety of building deficiencies typically seen in historic buildings, and investigating their repair strategies, students are exposed to traditional and contemporary solutions to problems.

Conservation standards are explored and students perform hands-on restoration techniques covering many facets of conservation work. Students learn about inspections, permits, site documents and contracts. Knowledge learned is used to develop a plan for a conservation project.

Prerequisite(s): WOO9306
Corerequisite(s):none

CON9111 Carpentry: Foundations, Floors, Walls and Basic Roofs

General carpentry and homebuilding skills are introduced through both practical and theoretical methods. Students focus on the skills and knowledge necessary to lay out and construct a foundation and floor system including differential levelling, location of building hubs, batterboards and footing formwork, foundation walls, columns, beams, joists and subfloors. An investigation into the framing of wall and basic roof systems includes wood stud framing, lintels, openings, sheathing, bracing and common rafters. Projects are constructed according to plans, schedules and the Ontario and National Building Codes.

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

DRA9113 Drafting for Carpentry and Joinery

Drafting is an essential communication tool in the building industry. Students acquire competency in the basics of drafting for the trades. Topics of study include freehand sketching, drafting instruments, materials and their use, lettering, isometric, oblique and orthographic shop drawings. An introduction to computer-assisted modelling reinforces students' skills in pictorial and orthographic drawings and their interpretation.

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

ENL9202 Communications II

Students write instructions and write for publication, create relevant job-search correspondence and career portfolios, writing various informal reports to suit a specified purpose, and write and present a formal research report on a program related topic.

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

ENL9212 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

GED0530 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

LFS9441 Site Work

Students are introduced to the practicalities of working on a conservation project. Working on an actual heritage building site challenges students' skills and prepares them for work in this rewarding field.

Prerequisite(s): WOO9228 and WOO9306
Corerequisite(s):none

MAT9116 Mathematics for Carpentry and Joinery

Focus is placed on the fundamentals of trades calculations and applied mathematics. Applications of course content to carpentry concepts include imperial measurement, fundamentals of perimeter, area and volume measurement, principles of ratio and proportion, basic trigonometry and geometry. Students are encouraged to develop the problem-solving skills necessary for success in the trades with mathematical exercises that are used daily by practicing carpenters.

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

WOO9216 Blueprints, Wood, and Geometry

Students are introduced to the fundamentals of blueprint reading and estimating, explore the application of geometry and proportion in classical moulding profiles and constructions, and learn the qualities and characteristics of wood that make it a versatile and useful building material.

Prerequisite(s): DRA9113 and MAT9116
Corerequisite(s):none

WOO9226 Joinery: Architectural Millwork

Millwork provides the finishing touches to a building and helps to define its character. Techniques are introduced for turning and bending wood. Students discuss and practise production techniques for fabricating and installing casings, baseboards, mouldings and other millwork pieces.

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

WOO9228 Carpentry: Roofs and Finishes

The study of wood-framed house construction continues with an investigation into the framing of more complex roof systems. Traditional hip, valley and jack rafter layouts are thoroughly explored. The layout and installation of siding, roof finishes, windows, doors and exterior trim are practiced and discussed.

Prerequisite(s): CON9111 and MAT9116
Corerequisite(s):none

WOO9254 Joinery Fundamentals

A comprehensive introduction to the use, selection and maintenance of hand tools is provided. Students research and compare woodworking techniques, and expand on their hand drafting fundamentals by reading, interpreting and developing plans. Students also develop procedures for a variety of projects and learn the safe and efficient use of both power hand tools and stationary machinery. Techniques and methods taught in this course provide a sound base on which to build a future in joinery and woodworking.

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

WOO9303 Traditional Carpentry: Timber Framing

An exploration of the time-honoured layout principles and cutting techniques used in traditional and contemporary timber frames is explored. Students construct a timber frame building whilst acquiring theoretical and practical skills. Traditional joinery and materials are stressed. Inspections of barns from the 19th and early 20th centuries allow an opportunity for appreciation of the craft and an understanding of their longevity, as well as an introduction to restoration and repair techniques.

Prerequisite(s): WOO9216 and WOO9228
Corerequisite(s):none

WOO9306 Traditional Joinery: Doors and Windows

Students learn the theory and production of traditional windows and doors. Close examination of these two elements reveal and showcase the skill of the joiner who created them. Windows and doors must be beautiful and strong and the ability to select appropriate joinery and construction techniques is essential for the long-term durability of these features. By following comprehensive organizational procedures and practicing various joint, students produce a traditional window and scaled door.

Prerequisite(s): WOO9216
Corerequisite(s):none

WOO9401 Culminating Architectural Millwork Project

Topics of investigation include both interior and exterior ornamental features. Students combine theoretical and practical skills to complete a culminating architectural project that challenges them to perform at a high level of skill.

Prerequisite(s): none
Corerequisite(s):WOO9403

WOO9402 Traditional Carpentry: Log Building

The tools, techniques and materials used to build heritage log buildings are explored in theory and in practice. Heritage log buildings are investigated to explore traditional material preparation, joinery techniques and foundation strategies. Students construct a hand-hewn, dovetailed log building using traditional methods.

Prerequisite(s): WOO9303
Corerequisite(s):none

WOO9403 Traditional Joinery: Staircasing and Ornamental Millwork

Designing and building staircases is often considered the pinnacle of a carpenter's craft. Through an examination of design, stringer layout, balustrade assembly and staircasing joinery, students learn to build a comfortable, safe, building code compliant staircase.

Prerequisite(s): WOO9216
Corerequisite(s):WOO9401