

Area of Interest: Construction and Skilled Trades

## Heritage Carpentry and Joinery

Ontario College Diploma

Program Code: 0530X01FWO

2 Years

Ottawa 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

Absorb the traditions of old-world craftsmanship through both theory and practice.

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 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.

### 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 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
ENL1813T	Communications I	42.0
MAT9105	Mathematics for the Craftsperson	42.0
WOO9254	Joinery Fundamentals	112.0
Level: 02	Courses	Hours
WOO9226	Joinery: Architectural Millwork	84.0
WOO9228	Carpentry: Roofs and Finishes	154.0
WOO9262	Blueprint Reading and Wood Technology	28.0
Level: 03	Courses	Hours
BSC9100	Housing, Energy and the Environment	42.0
ENL2003	Communications II for Technicians	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
WOO9334	Traditional Joinery: Staircasing	126.0
WOO9401	Culminating Architectural Millwork Project	70.0
WOO9402	Traditional Carpentry: Log Building	56.0

## 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 <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 to \$1500 in the first year and \$300 to \$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 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 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.

## Application Information

### HERITAGE CARPENTRY AND JOINERY Program Code 0530X01FWO

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, please visit:

Admissions - Registrar's Office  
<https://www.algonquincollege.com/ro/admissions>

## **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)**

- Jack Hollinger, <mailto:hollinj@algonquincollege.com>, 613-267-2859, ext. 5639

## **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): WOO9228 and WOO9306  
Corerequisite(s):none

### **CON9111 Carpentry: Foundations, Floors, Walls and Basic Roofs**

Built structures require a solid foundation, walls and roofs. Students develop basic carpentry and building skills. Emphasis is on developing the skills and knowledge necessary to lay out and construct a foundation and floor-system including differential levelling, location of building hubs, batter boards and footing formwork, foundation walls, columns, beams, joists and subfloors. Students frame wall and basic roof systems including wood stud framing, lintels, openings, sheathing, bracing and common rafters for a small building. Projects are constructed according to plans, schedules, and 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

### **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

### **ENL2003 Communications II for Technicians**

Communicating effectively in the workplace is a key component of career advancement and essential skills development. The ability to read, understand, reframe and deliver technical information to varied audiences is critical in a competitive marketplace. Students are exposed to a variety of common communication challenges related to working in their field of study. To meet these challenges, students are required to do basic research and data gathering, to summarize and reframe written, oral and visual information and to present their findings to a defined audience in an appropriate medium or media.

Prerequisite(s): ENL1813T

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): none

Corerequisite(s):none

### **MAT9105 Mathematics for the Craftsperson**

Fundamental trades calculations, applied mathematics, and geometric constructions have been used by tradespeople for centuries and are the basis of all our built heritage. Topics include imperial measurement, fundamentals of perimeter, area and volume measurement, principles of ratio and proportion, basic trigonometry and geometry. Linear constructions, layout using geometric principles, the golden mean and classical moulding profiles are explored. Students

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

### **WOO9226 Joinery: Architectural Millwork**

Millwork provides the finishing touches to a building and helps to define its character. Students practice skills and techniques for turning and bending wood, and for fabricating and installing casings, baseboards, mouldings and other millwork pieces.

Prerequisite(s): DSN1100 and MAT9105 and WOO9254 or DRA9113 and MAT9105 and WOO9254

Corerequisite(s):none

### **WOO9228 Carpentry: Roofs and Finishes**

Wood-framed houses may require complex roof systems and finishes. Students explore traditional gable and hip roof framing including regular and irregular hip, valley, and jack rafters. Various contemporary and traditional exterior finishes are investigated. Working in teams, students complete the layout and installation of siding, roof finishes, windows, doors and exterior trim for a small building. Emphasis is placed on the understanding of traditional practices and techniques.

Prerequisite(s): CON9111 and MAT9105 or CON9111 and MAT9116

Corerequisite(s):none

### **WOO9254 Joinery Fundamentals**

Techniques for joining wood together are rooted in the knowledge and skills that have been passed down for thousands of years. The selection, use and maintenance of hand tools is examined and practiced. Students research and compare woodworking techniques, and expand on their hand drafting fundamentals by reading, interpreting and developing plans and shop drawings. Students also develop procedures for a variety of projects and learn the safe and efficient use of both power hand tools and stationary machinery. By applying traditional joinery in the building of a variety of hands-on projects, students develop a sound base for a future in joinery and woodworking.

Prerequisite(s): none

Corerequisite(s):none

### **WOO9262 Blueprint Reading and Wood Technology**

Students are introduced to the fundamentals of blueprint reading and estimating and learn the qualities and characteristics of wood that make it a versatile and useful building material.

Prerequisite(s): DRA9113 and MAT9105 or DRA9113 and MAT9116

Corerequisite(s):none

### **WOO9303 Traditional Carpentry: Timber Framing**

Timber framing involves just as much art as science. Students apply specialized and time-honoured layout and joinery techniques to construct a timber frame structure. Restoration and repair techniques are investigated. Through inspections of barns from the 19th and early 20th centuries students develop an appreciation of the history, craft, and the strength and endurance of timber frame structures.

Prerequisite(s): WOO9228 and WOO9262 or DSN1100 and WOO9228

Corerequisite(s):none

### **WOO9306 Traditional Joinery: Doors and Windows**

Doors and windows are an integral part of the aesthetic, design, and character of a building.



Students investigate the theory and production of traditional windows and doors. Close examination of these two elements reveals and showcase the skill of the joiner who created them. The ability to select appropriate joinery and construction techniques is essential for the long-term durability and aesthetics of doors and windows. By following comprehensive organizational procedures and practicing various joints, students produce a traditional window and scaled door.

Prerequisite(s): DSN1100 and WOO9226 or WOO9226 and WOO9262  
Corerequisite(s):none

### **WOO9334 Traditional Joinery: Staircasing**

Designing and building staircases is often considered the pinnacle of a carpenter's craft. Students learn how to build a comfortable, safe building code compliant staircase. Design, stringer layout, balustrade assembly and staircasing joinery are investigated in detail.

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

### **WOO9402 Traditional Carpentry: Log Building**

The rustic elegance and warmth of natural wood, combined with technological innovation come together in the creation of sustainable log buildings. 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): DSN1100 and WOO9228 or WOO9228 and WOO9262  
Corerequisite(s):none