

Area of Interest: Construction and Skilled Trades

## General Construction Carpentry Techniques - Apprenticeship

Ontario College Certificate

Program Code: 0504X01FPM

24 Weeks

Pembroke Campus

### Our Program

**Become a skilled journeyperson for a career in the construction industry.**

The General Construction Carpentry Techniques - Apprenticeship Ontario College Certificate program fulfills the in-class requirements for a General Carpenter apprenticeship and prepares apprentices to work as skilled carpenters in the construction industry.

Applicants to the General Construction Carpentry Techniques - Apprenticeship Ontario College Certificate program must:

- be currently employed in the trade
- be formally registered as apprentices with the Ministry of Labour, Training and Skills Development (MLTSD)
- have a valid Offer of Classroom Training from the Ministry of Labour, Training and Skills Development that include your Ministry Client ID and approved Class Number

Eligibility is determined by the Ministry of Labour, Training and Skills Development.

Carpenters are required to perform a variety of specialized jobs, including:

- rough carpentry
- form building
- framing
- fine finishing
- maintenance work

In addition to these skills, a carpenter needs to have a basic understanding of standard building procedures, building regulations and properties of materials. Due to the construction industry involving the combined efforts of a number of different trades, carpenters must be familiar with the relationship of carpentry work to that of other journeypersons.

To learn more about apprenticeships, visit <http://www.ontario.ca/page/skilled-trades> for detailed information.

**For Registered Apprentices:** This program fulfills the in-class requirements for your apprenticeship. Apprentices are introduced to safety, materials and tools common to all construction projects. Hand tools, as well as portable and stationary power tools, are used to construct shop projects and reinforce theoretical knowledge.

You learn the residential construction process, including the theoretical and practical application of:

- foundation systems

- framing
- equal and unequal slope hip roofs
- exteriors and interiors
- basic principles of building science

You also learn about carpentry in the industrial, commercial and institutional (ICI) sector, including building layout, concrete form work, stair building, interior finishing and an introduction to timber framing.

## SUCCESS FACTORS

This program is well-suited for students who:

- Enjoy learning about the carpentry and construction industry in a mix of practical and theory settings.
- Like analyzing and solving problems.
- Are attentive to detail.

## Employment

Apprenticeship graduates may be employed in the residential and industrial, commercial and institutional (ICI) construction industries.

## Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Identify, select and safely use tools to complete a given task to supplied specifications, codes and/or instructions.
- Evaluate, select and apply the appropriate construction material and fastening systems for a specific use in the industry.
- Adhere to the standards set forth in the Ontario Building Code for all types of construction.
- Apply the principles of drafting to the interpretation and production of sketches including survey and plot plans, and architectural, mechanical, and electrical drawings.
- Solve construction-related problems and plan and design small projects using a variety of mathematical concepts and techniques.
- Apply the principles of energy conservation to residential and commercial projects.
- Use computer technology to research and create material related to both residential and ICI sectors of the construction industry.
- Identify and work within the interdependence of skilled trades on a construction site to complete projects in a timely, financially-responsible and ethical manners.

## Program of Study

Level: 01	Courses	Hours
DRA7331	Plans, Specifications and Code I	24.0
WEL7300	Welding for General Carpenters	16.0
WOO7313	Safety, Materials and Tools	168.0
WOO7314	Estimating, Calculating and Layout I	32.0

Level: 02	Courses	Hours
DRA7332	Plans, Specifications and Codes II	24.0
WOO7323	Residential Construction	192.0
WOO7324	Estimating, Calculating and Layout II	24.0
Level: 03	Courses	Hours
DRA7333	Plans, Specifications and Codes III	24.0
WOO7333	Industrial, Commercial, Institutional (ICI) Construction	192.0
WOO7335	Estimating, Calculating and Layout III	24.0

## Fees for the 2023/2024 Academic Year

Tuition Fees: \$400 per level.

Incidental Fee: \$150 per level.

Information Technology Fee: \$43.86 per level.

Students are responsible for supplying their own personal hand tools. Books and supplies can be purchased in the campus store.

Students are responsible for parking and locker fees, if applicable.

All students are responsible to supply their own personal protective equipment (such as CSA-approved safety footwear, non-tinted protective eyewear, hearing protection, gloves, hard hat) as required in each lab environment.

## Admission Requirements for the 2024/2025 Academic Year

### College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent; OR
- Mature Student status (19 years of age or older and without a high school diploma at the start of the program).

### Program Eligibility

- Prospective students must be registered apprentices with the Ministry of Labour, Training and Skills Development and must be a member in good standing with Skilled Trades Ontario (STO).
- Eligibility is determined by the Ministry of Labour, Training and Skills Development.

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## Application Information

### **GENERAL CONSTRUCTION CARPENTRY TECHNIQUES - APPRENTICESHIP** **Program Code 0504X01FPM**

Registration for Apprenticeship programs takes place through the Ministry of Labour, Training, and Skills Development.

For further information, contact:

Ministry of Labour, Training and Skills Development  
615 Pembroke ST. E.  
Pembroke, ON K8A 3L7

<https://www.ontario.ca/page/start-apprenticeship>

Telephone: 613-735-3911

Toll-free: 1-877-221-1220

## Contact Information

### **Program Coordinator(s)**

- Adam Johns, <mailto:johnsa@algonquincollege.com> , 613-735-4700, ext. 2687

## Course Descriptions

### **DRA7331 Plans, Specifications and Code I**

The ability to read, interpret and prepare drawings, plans and sketches is essential in the carpentry trade. Apprentices read and interpret simple drawings, use standard drafting tools, read and apply metric and U.S. Customary units and produce basic construction plans. Apprentices also examine the roles of owner, architect, engineer, contractor, as well as controlling authorities, regulations, and the Ontario Building Code.

Prerequisite(s): none

Corerequisite(s): WEL7300 and WOO7313 and WOO7314

### **DRA7332 Plans, Specifications and Codes II**

The ability to interpret residential building codes and blueprints enables apprentices to take on greater responsibilities in the carpentry trade. Apprentices practise reading and interpreting residential drawings with reference to plot plans; foundation and floor plans; elevation, section, and detail drawings; as well as specifications and schedules.

Prerequisite(s): DRA7331

Corerequisite(s): WOO7323 and WOO7324

### **DRA7333 Plans, Specifications and Codes III**

Interpreting industrial, commercial and institutional (ICI) building specifications and drawings enables apprentices to advance their careers in the carpentry trade. Apprentices examine ICI construction regulating authorities, building codes, plans and specifications through lectures, demonstrations, assignments and drawings. Topics include ground work; foundations; floors, walls and roofs; interior and exterior finish; electrical and mechanical drawings; and accessibility.

Prerequisite(s): DRA7332

Corerequisite(s): WOO7333 and WOO7335

**WEL7300 Welding for General Carpenters**

Welding is a skill essential to the Carpentry trade. Apprentices develop basic competence in welding by understanding the operating principles of oxy-acetylene cutting and Shielded Metal Arc Welding (SMAW). Apprentices also examine the principles of flame types and temperatures, joint preparation, welding electrode compositions, as well as general safety practices. Theory and practical instruction are offered in a lab setting.

Prerequisite(s): none

Corerequisite(s): DRA7331 and WOO7313 and WOO7314

**WOO7313 Safety, Materials and Tools**

Selecting and using hand and power tools, materials, and fasteners is the basis of safe and skillful practice in the trades. Through theoretical and practical instruction, apprentices explore the history of the carpentry trade, hand and power tools, basic carpentry and joinery operations, lumber and engineered wood products, the Occupational Health and Safety Act, hoisting and rigging techniques and the safe use of ladders and scaffold equipment.

Prerequisite(s): none

Corerequisite(s): DRA7331 and WEL7300 and WOO7314

**WOO7314 Estimating, Calculating and Layout I**

The ability to solve carpentry-related mathematics and construction geometry problems puts apprentices at a considerable advantage in the trade. In the math portion, apprentices review the skills to add, subtract, multiply and divide fractions commonly used in construction, as well as the process of converting fractions to decimal format. Apprentices also determine perimeter, area and volume of shapes using both U.S. Customary units and metric measurement, as well as use the Pythagorean Theorem and the principle of similar triangles to calculate the length of sides for right-angle triangles. In the geometry portion, apprentices apply the basic principles of geometric layout used in construction.

Prerequisite(s): none

Corerequisite(s): DRA7331 and WEL7300 and WOO7313

**WOO7323 Residential Construction**

Understanding the basics of residential construction reinforces the essential role of the carpentry trade in home building. Through theoretical and practical instruction, apprentices explore foundation systems; beams; framing floors, walls and roofs; interior and exterior finishing; and energy efficiency. Lectures, demonstrations, videos, and practical projects help apprentices understand these topics for both new-construction and renovation applications.

Prerequisite(s): WOO7313

Corerequisite(s): DRA7332 and WOO7324

**WOO7324 Estimating, Calculating and Layout II**

Estimating time and material quantities is necessary before residential construction work begins. Through lectures and practical exercises, apprentices use working drawings to take off material quantities and produce cost estimates for foundations, framing, exterior and interior finishes of a residential construction project.

Prerequisite(s): WOO7314

Corerequisite(s): DRA7332 and WOO7323

**WOO7333 Industrial, Commercial, Institutional (ICI) Construction**

A sound grounding in industrial, commercial and institutional (ICI) construction helps apprentices understand the essential role of the carpentry trade. Apprentices examine site practices and layout; soil conditions; shoring and underpinning; forms for footings, piers, walls, columns, stairs, and beams and scaffolding. Apprentices erect concrete formwork for walls and suspended slabs;

install drywall, suspended ceilings and steel stud walls; as well as install commercial doors and related hardware. With the help of lectures, demonstrations, videos, and practical projects, apprentices also construct straight-run wood stairs with railing and quarter-turn winder stairs; use theodolites and automatic levels for site and building layout; as well as layout and construct a timber frame structure.

Prerequisite(s): WOO7323  
Corerequisite(s): DRA7333 and WOO7335

**WOO7335 Estimating, Calculating and Layout III**

Estimating time and material quantities for industrial, commercial and institutional (ICI) construction enables apprentices to advance their careers in the carpentry trade. Through lectures and practical exercises, apprentices use working drawings to take off material quantities and produce cost estimates for items such as concrete formwork, concrete volumes, commercial roofs, interior finishes and temporary components such as guardrails, ramps and hoarding.

Prerequisite(s): WOO7324  
Corerequisite(s): DRA7333 and WOO7333