



# Ironworker

SCHOOL OF MANUFACTURING & AUTOMATION

## Overview

Learn to fabricate, construct and join scaffolding, structural steel buildings, bridges, ornamental ironwork and pre-cast structures.

Ironworkers build structural components, reinforce steel, post-tension tendons, install conveyors and robotic equipment and sometimes perform reconstructive work on existing structures.

While on the job, you'll perform some of the following duties:

- read blueprints
- unload and stack steel units so each piece can be hoisted as needed
- erect and install scaffolding, construction cranes, derricks and other hoisting equipment
- assemble rigging to move heavy equipment and materials and direct crane operators with hand signals or radios
- position steel units, align holes and insert temporary bolts
- check the alignments and join steel parts by bolting or tack welding them with an electric arc process
- assemble and erect prefabricated metal structures
- select, cut, bend, position, and secure steel bars or wire mesh in concrete forms to reinforce the concrete
- install ornamental and other structural metalwork such as curtain walls, metal stairways, railing and power doors
- unload and install pre-cast components.

## Traits, skills and aptitudes

Ironworkers are self-motivated, can work at heights and enjoy a variety of tasks. This line of work is most fulfilling for those who enjoy physically active work and working on a team.

To thrive in this career, it is important to have the following traits:

- the ability to interpret blueprints
- understanding of safe work practices and knowledge of tools used in the trade
- to be able to work at heights
- strength, stamina, and proper lifting techniques for heavy items weighing more than 25 kilograms
- good muscular coordination, agility and balance
- willingness to travel to various work sites
- ability to work cooperatively with others
- quick decision-making skills during emergencies
- commitment to safe work habits

## Credentials

Upon successfully completing the required working hours and apprenticeship education periods, graduates will be awarded a certificate in addition to journey person status by Alberta's Apprenticeship and Industry Training.

Ironworker — reinforcer and Ironworker — structural/ornamental are Red Seal Endorsed trades — a recognizable standard that allows tradespeople to work across Canada.

## Admission requirements

To enter an apprenticeship, you must have the educational qualifications required or recommended education for the trade to which you apply.

Entrance requirements are monitored and set by Alberta Apprenticeship and Industry Training.

## Minimum requirements

Successful completion of the following courses:

- English 10-2
- Math 10-3

OR

A pass mark in all five Canadian General Educational Development (GED) tests

OR

Alberta Apprenticeship and Industry Training Entrance Exam

## Recommended requirements

Apprentices with an Alberta High School Diploma that includes the following courses:

- English 30-2
- Math 30-3
- Physics 20 OR Chemistry 20 OR Science 20
- Related career and technology studies (CTS) courses

## Costs

### 2024/25 tuition and fees

The following costs are effective as of July 1, 2024.

### Metal Building Systems Erector/Reinforcing

Period	Number of weeks	Tuition fees	Additional fees	Total
1	6	\$864	\$311	\$1,175
2	6	\$864	\$311	\$1,175
Total cost:				\$2,350

The estimated total cost of 2024/25 tuition and fees in each period of technical training.

### Structural/Ornamental

Period	Number of weeks	Tuition fees	Additional fees	Total
1	6	\$864	\$311	\$1,175
2	6	\$864	\$311	\$1,175
3	6	\$864	\$311	\$1,175
Total cost:				\$3,525

The estimated total cost of 2024/25 tuition and fees in each period of technical training.

## Books and Supplies

Books or modules, along with other items for classes, are approximately \$600 per period.

It's recommended you don't purchase books or modules ahead of time as they might be outdated by the time you attend classes, and they cannot be returned to the Bookstore.

Personal protective equipment (PPE) will be required for the program, which may be an additional cost to apprentices.

### 2023/24 tuition and fees

The following costs are effective until June 30, 2024.

Period	Number of weeks	Tuition fees	Additional fees	Total
1	6	\$792	\$301	\$1,093
2	6	\$792	\$301	\$1,093
3	6	\$792	\$301	\$1,093
Total cost:				\$3,279

The estimated total cost of 2023/24 tuition and fees in each period of technical training.