Welder

SCHOOL OF MANUFACTURING & AUTOMATION

Overview

Learn how to join or sever metals in beams, girders, vessels, piping and other metal components. You'll make metal parts used in construction and manufacturing plants, and weld parts, tools, machines and equipment.

There are two different specializations for this trade.

Welder

On the job, you'll apply heat to metal pieces to melt and fuse them. Different welding methods and fillers are used depending on the type of metal, its size and shape and how strong the final piece needs to be. The different types of welding include:

- Electric Arc Welding: an electric current creates heat by jumping between the tip of a welding electrode and the metal to melt it.
- Gas Welding: a flame made by burning gases melts the metal.
- Resistance Welding: electricity passes through the metal, heating it up until it melts, without needing extra filler material.

For a typical welding project, you'll:

- develop patterns for projects or follow directions given in layouts, blueprints and work orders
- clean, check for defects and shape parts, sometimes using a cutting torch
- weld parts together.

You may also build up worn parts by welding layers of high-strength hard-metal alloys onto them.

Welder-Wire Process Operator

You'll work primarily in production and manufacturing plants, joining components and sub-assemblies to make various items using various construction materials.

Welding in this branch of the welder trade is restricted to:

- gas metal arc welding (GMAW)
- flux cored arc welding (FCAW)
- submerged arc welding (SAW)
- other semiautomatic wire feed welding processes.

The welder-wire process operator uses different welding processes and filler metals depending upon the type of metal, its size and shape, and requirements for finished mechanical properties. This one-year specialty shares a common first year with the Welder apprenticeship.

To work in this trade, certification is required. This means that you must either be a registered apprentice working under the guidance of a certified journeyperson or be a certified journeyperson yourself.

Traits, skills and aptitudes

To succeed in these trades, you should:

- have good hand-eye coordination and vision
- have the strength and stamina to carry heavy tools
- be able to visualize a finished product from a document
- be able to to concentrate on detailed work
- be patient and dependable
- be comfortable working in a construction or shop environment
- be committed to maintaining safe working conditions.

Credentials

Upon successfully completing the required working hours and technical training periods, you'll be awarded a diploma (Welder) or a certificate (Wire Process Operator) and journeyperson status by Alberta's Apprenticeship and Industry Training.

This is a Red Seal Endorsed trade – 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

2025/26 tuition and fees

The following costs are effective as of July 1, 2025.

Welder

Period	Number of weeks	Tuition fees	Additional fees	Total
1	8	$1,200	$339.16	$1,539.16
2	8	$1,200	$339.16	$1,539.16
3	8	$1,200	$339.16	$1,539.16
			Total cost:	**$4,617.48**

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

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1	8	$1,200	$339.16	$1,539.16
			Total cost:	**$1,539.16**

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

Books and Supplies

This is a bring-your-own-device program with standard computer hardware and software requirements. See the specific requirements on our computers and laptops page.

Books or modules, along with other items for classes, are approximately $670 per period.

We recommend 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.