WELDA – Welder Modular A

Trades

Effective Term & Year: Fall 2022
Program Outline Review Date: 2026-03-01

Program Area: Trades Apprenticeship Training

Description:

This program covers program competencies required for Modular A Level Welder program. Students receive training in the following welding processes: Shielded Metal Arc Welding (SMAW) on stainless steel and low carbon steel plate and pipe, Gas Tungsten Arc Welding (GTAW) for stainless steel, specialized processes, basic metallurgy, and how to interpret welding drawings and fabricate weldments. Quality control and inspection requirements and welding standards, codes, specifications, and welder jurisdictional bodies are also covered within the program. Safe work practices related to the welder trade are reinforced throughout the program.

Credentials Granted:

Upon successful completion of the Welder Modular “A” program students are eligible to write the Certificate of Qualification for Modular A Red Seal Exam.

Delivery Methods: On-Campus (Face-to-Face), Online

Program Duration: 8 weeks

Instructional Activity and Hours:

Activity	Hours
Instructional Hours (hrs/wk)	28 hrs/wk
Directed Studies (hrs/wk)	2 hrs/wk

Total (hrs/wk)	30 hrs/wk
Total Program Hours	240 Hours

Content Weighting:

Activity	Percentage
Theory	20%
Practical Skills	80%

Admission Requirements:

Must have completed Modular “B” with Inter-Provincial Red Seal.

Flexible Assessment:

Credit cannot be awarded for this program through Flexible Assessment.

Program Transfer Credit:

For information about block transfer agreements between programs in British Columbia, Alberta, and elsewhere, please visit http://www.cotr.bc.ca/transfer.

To minimize transfer issues, check with an academic advisor at the institution that will receive the transfer credits.

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Program Outline Effective Date the following textbooks were in use (most current edition):

Welding “A” Level Modules

Program Competencies and Technical Training Content:

Upon the successful completion of this program, students will be able to:

WELD P11

(Line D) **Shielded Metal Arc Welding III (SMAW) (89 Hours)**

- Select electrodes for SMAW
- Use the SMAW process on low carbon steel plate and pipe
- Use the SMAW process on stainless steel and/or low carbon steel plate and pipe

WELD P12

(Line F) **Gas Tungsten Arc Welding III(GTAW) (99 Hours)**

- Use the GTAW process for ferrous metals, stainless steel and aluminum

WELD P13

(Line G) **Specialized Processes (13 Hours)**

- Describe orbital welding and its applications
- Describe specialized welding processes, equipment and their applications

WELD RK8

(Line H) **Metallurgy III (10 hours)**

- Describe common ferrous, non-ferrous and reactive metals and their weldability, including nickel and nickel alloys, copper and copper alloys, magnesium and magnesium alloys, lead and lead alloys, titanium and titanium alloys, zirconium and zirconium alloys, tantalum and tantalum alloys and columbium and columbium alloys
- Describe the grain structure in metals, dendritic growth, space-latticed types in metals and changes in grain structure that result from welding
- Describe die castings and their weldability

WELD RK9

(Line I) **Welding Drawings, Layout and Fabrication III (13 Hours)**

- Interpret and apply mechanical drawings and layout components
- Fabricate weldments

Evaluation and Assessment:

WELDER MODULAR A

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING

WELD P11 (Line D)	Shielded Metal Arc Welding III (SMAW)	15%	45%
WELD P12 (Line F)	Gas Tungsten Arc Welding III (GTAW)	15%	50%
WELD P13 (Line G)	Specialized Processes	15%	0%
WELD RK8 (Line H)	Metallurgy III	30%	0%
WELD RK9 (Line I)	Welding Drawings, Layout and Fabrication III	25%	5%
	Total	**100%**	**100%**
In-School Theory/Practical Subject Competency Weighting		20%	80%

Final in-school percentage score
Apprentices must achieve a minimum 70% as the final in-school percentage score to be eligible to write the Interprovincial Red Seal exam.

IN-SCHOOL %

Pass Requirements:

1. Successful completion of the in-school training is defined as a final overall minumum of 70% to meet SkilledTradesBC standards.
    - Students must maintain an acceptable level of attendance, complete all assigned projects and pass all exams to successfully complete the program.

Students must provide their own:

- Steel-toed Leather Work Boots
- Safety Glasses
- Welding Gloves
- Flame retardant work clothes (cotton or wool)
- Leather welding jacket
- Welding helmet (#11 lens)
- Welding Goggles (#5 lens)
- Reference Manuals

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.4.8 Academic Performance
- Policy 2.5.3 Grade Appeal

- Policy 2.4.9 Student Concerns Re Faculty

Program Grade

COM	NCG
Completed to the defined standard – 70% or greater	No Credit Granted – less than 70%

Program Changes:

Information contained in program outlines is correct at the time of publication. Content of the program is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add material to programs.

Industry Training:

The program competencies and technical training content delivered in this program follow the SkilledTradesBC Program Outline for this trade.

Safety Catalog:

WorkSafeBC regulations apply to all trades programs. Students are expected to follow all safe work practices and have high regard for the safety of others as well as of themselves. Students are responsible to wear personal protective equipment (PPE) as directed. At a minimum, students must provide and wear approved safety footwear and eyewear at all times in the shop. Additional PPE may be required for specific tasks. Students are expected to wear clothing suitable for working safely in the shop.