



Welder - Upgrading

A Guide to Course Content

Welders cut and join metals using various methods and equipment.

Training Requirements: All candidates applying for upgrading training must be eligible to challenge the Interprovincial journeyman examination.

The information contained in this pamphlet serves as a guide for employers and apprentices. The pamphlet briefly summarizes the upgrading training available through the Saskatchewan Apprenticeship and Trades Certification Commission (SATCC). This program is designed to prepare individuals to challenge the Welder Interprovincial journeyman examinations.

Saskatchewan Polytechnic Welder Upgrading (in-class)

The content of the 7-week theory/practical program includes approximately 2 hours per day of instructor guided theory training. Instructors administer practical and theory assessments during the first week to identify the knowledge and skill level of each student. As a result of these pre-tests, time frames for each portion of training may be adjusted to suit the needs of the candidate.

NOTE: This course is delivered as a complete 7-week program that includes both theory and practical instruction. If the individual enrolled in the upgrading program has successfully passed the practical portion of the Red Seal Examination, they will be assigned additional theory study materials during the instruction of the practical portion of the course. Students are required to be in attendance for the entire day of training.

The content of the technical training components is subject to change without notice.

Saskatchewan Polytechnic Welder Upgrader – 7 weeks

Theory Areas of Instruction:

General Welding Safety

- Interpretation of safety legislation and standards
- Material handling and rigging practices
- Personal protective equipment and practices
- Safe shop work practices - housekeeping, equipment and tool use

NOA topics covered in this section of training:

A-1 Maintains Tools and Equipment

A-1.01 Maintains hand, power, layout and measuring tools

- hand, power, layout and measuring tools, their characteristics, applications and operation
- procedures to maintain and store hand, power, layout and measuring tools
- stationary machinery, their characteristics, applications and operation
- procedures to maintain and store stationary machinery

A-1.02 Maintains stationary machinery

- stationary machinery, their characteristics, applications and operation
- procedures to maintain and store **stationary machinery**

A-2 Uses access and material handling equipment

A-2.01 Uses access equipment

- access equipment, their characteristics, applications and operation
- procedures to use and operate access equipment
- training and certification requirements to use and operate access equipment
- regulatory requirements pertaining to access equipment

A-2.02 Uses rigging, hoisting and lifting equipment

- material handling equipment, their components, characteristics, applications and operation
- of procedures to use and operate material handling equipment
- training and certification requirements to use and operate material handling equipment
- regulatory requirements pertaining to material handling equipment

A-3 Performs safety-related activities

A-3.01 Performs hazard assessments

- hazard assessments
- procedures to perform hazard assessments

A-3.02 Maintains safe work environment

- safe work environments
- procedures to maintain safe work environment
- site-specific training and certification requirements to maintain safe work environment
- regulatory requirements pertaining to maintaining safe work environments

A-3.03 Uses personal protective equipment (PPE) and safety equipment

- PPE and safety equipment, their characteristics, applications and operation
- procedures to use PPE and safety equipment
- training and certification requirements to use PPE and safety equipment
- regulatory requirements pertaining to using PPE and safety equipment

C-8 Uses tools and equipment for non-thermal cutting and grinding

C-8.01 Selects cutting and grinding tools

- materials, their characteristics and applications
- cutting and grinding tools and equipment, their characteristics, applications and limitations
- procedures to use cutting and grinding tools and equipment

C-8.02 Cuts using stationary band saws and power hacksaws

- materials, their characteristics and applications

- stationary power tools, their characteristics, applications and limitations
 - procedures to cut materials using stationary power tools
- C-8.03 Cuts using shears and ironworkers
- materials, their characteristics and applications
 - shears and ironworkers, and their characteristics, applications and limitations
 - procedures to cut materials using shears and ironworkers
- C-8.04 Cuts using hand tools
- materials, their characteristics and applications
 - hand tools, their characteristics, applications and limitations
 - procedures to cut materials using hand tool
- C-8.05 Cuts using handheld power tools
- materials, their characteristics and application
 - portable power tools, their characteristics, applications and limitations
 - procedures to cut materials using portable power tools

Quality Assurance

- Identification of applicable codes and standards
- Mill test results, heat numbers and material traceability
- Weld procedure data sheets, electrode data sheets and procedure qualification records
- Interpretation of welder qualification information

NOA topics covered in this section of training:

A-5 Performs routine trade activities

A-5.07 Finishes final product

- finishes
- procedures to finish final product

Special Welding and Cutting Processes

- OFW and OFC safety, equipment and accessories
- CAC-A and PAC safety, equipment and accessories
- Specialized welding processes - SAW, SW, PAW, TW and RW

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 Maintains welding equipment

- welding equipment, their characteristics, applications and operation
- procedures to maintain and store welding equipment

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-13 Welds using flux cored arc welding (FCAW), metal cored arc welding (MCAW) and gas metal arc welding (GMAW) processes

D-13.01 Selects FCAW, MCAW and GMAW gas, equipment and consumables

- base metals, their characteristics and applications
- FCAW, MCAW and GMAW processes, gas, **equipment, components** and consumables, their characteristics, applications and operation

D-13.02 Sets up FCAW, MCAW and GMAW equipment

- FCAW, MCAW and GMAW processes, gas, **equipment, components** and consumables, their characteristics, applications and operation
- procedures to set up FCAW, MCAW and GMAW **equipment and components**
- training and qualification requirements pertaining to FCAW, MCAW and GMAW **equipment and components**
- regulatory requirements pertaining to FCAW, MCAW and GMAW **equipment and components**

D-13.03 Sets operating parameters for FCAW, MCAW and GMAW

- FCAW, MCAW and GMAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for FCAW, MCAW and GMAW equipment

D-13.04 Performs weld using FCAW, MCAW and GMAW equipment

- base metals, their characteristics and applications
- procedures to weld using GMAW, MCAW and FCAW equipment
- training and qualification requirements to weld using GMAW, MCAW and FCAW equipment
- regulatory requirements pertaining to welding using GMAW, MCAW and FCAW processes

D-15 Welds using submerged arc welding (SAW) process

D-15.01 Selects SAW equipment and consumables

- base metals, their characteristics and applications
- SAW processes, equipment, components and consumables, their characteristics, applications and operation

D-15.02 Sets up SAW equipment

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set up SAW equipment and components
- training and qualification requirements pertaining to SAW equipment and components
- regulatory requirements pertaining to SAW equipment and components

D-15.03 Sets operating parameters for SAW

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for SAW equipment

D-15.04 Performs weld using SAW equipment

- base metals, their characteristics and applications
- procedures to weld using SAW equipment and components
- training and qualification requirements to weld using SAW equipment and components

Shielded Metal Arc Welding (SMAW)

- Design and function of weld power sources and accessories
- SMAW safety considerations
- Weld faults
- Joint preparation for plate

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 Maintains welding equipment

- welding equipment, their characteristics, applications and operation

1-877-363-0536

apprenticeship@gov.sk.ca

saskapprenticeship.ca

- maintain and store welding equipment

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-12 Welds using shielded metal arc welding (SMAW) process

D-12.01 Selects SMAW equipment and consumables

- base metals, their characteristics and applications
- SMAW processes, equipment, **components** and consumables, their characteristics, applications and operation
- training and qualification requirements for SMAW
- regulatory requirements pertaining to SMAW equipment, **components** and consumables

D-12.02 Sets up SMAW equipment

- SMAW processes, equipment, **components** and their characteristics, applications and operation

D-12.03 Sets operating parameters for SMAW

- SMAW processes, equipment, **components** and their characteristics, applications and operation
- procedures to set operating parameters for SMAW equipment

D-12.04 – performs weld with SMAW equipment

- base metals, their characteristics and applications
- procedures to weld using SMAW equipment
- regulatory requirements pertaining to welding using SMAW process

Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW) and Metal Core Arc Welding (MCAW)

- Design and functions of components and accessories of a GMAW and a FCAW power source
- GMAW, FCAW and MCAW safety considerations
- Applications of each welding process
- Identification of weld parameters

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 Maintains welding equipment

- welding equipment, their characteristics, applications and operation
- procedures to maintain and store *welding equipment*

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-13 Welds using flux cored arc welding (FCAW), metal cored arc welding (MCAW) and gas metal arc welding (GMAW) processes

D-13.01 Selects FCAW, MCAW and GMAW gas, equipment and consumables

- base metals, their characteristics and applications
- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation

D-13.02 Sets up FCAW, MCAW and GMAW equipment

- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation
- procedures to set up FCAW, MCAW and GMAW *equipment and components*
- training and qualification requirements pertaining to FCAW, MCAW and GMAW *equipment and components*
- regulatory requirements pertaining to FCAW, MCAW and GMAW *equipment and components*

D-13.03 Sets operating parameters for FCAW, MCAW and GMAW

- FCAW, MCAW and GMAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for FCAW, MCAW and GMAW equipment

D-13.04 Performs weld using FCAW, MCAW and GMAW equipment

- base metals, their characteristics and applications
- procedures to weld using GMAW, MCAW and FCAW equipment
- training and qualification requirements to weld using GMAW, MCAW and FCAW equipment
- regulatory requirements pertaining to welding using GMAW, MCAW and FCAW processes

Gas Tungsten Arc Welding (GTAW)

- Design and function of all major GTAW components and accessories
- GTAW safety considerations

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 – maintains welding equipment

- welding equipment, their characteristics, applications and operation A-5 Performs routine trade activities

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications

- gas cylinders, their characteristics and applications
 - procedures to store gas cylinders
 - regulatory requirements pertaining to storage of gas cylinders
- A-5.05 Selects welding process and power source
- welding processes and power sources, their characteristics and applications
 - procedures to select welding processes and power sources
 - emerging technologies related to welding processes and power sources
- A-5.06 Performs equipment start-up and shut-down\
- equipment start-up and shut-down
 - procedures to start-up and shut-down equipment
- D-14 Welds using gas tungsten arc welding (GTAW) process**
- D-14.01 Selects GTAW gas, equipment and consumables
- base metals, their characteristics and applications
 - GTAW processes, gas, equipment, components and consumables, their characteristics, applications and operation
- D-14.02 Sets up GTAW equipment
- GTAW processes, equipment, their components, characteristics, applications and operation
 - procedures to set up GTAW equipment and components
 - training and qualification requirements pertaining to GTAW equipment and components
 - regulatory requirements pertaining to GTAW equipment and components
- D-14.03 Sets operating parameters for GTAW
- GTAW processes, equipment, their components, characteristics, applications and operation
 - procedures to set operating parameters for GTAW equipment
- D-14.04 Performs weld using GTAW equipment
- base metals, their characteristics and applications
 - procedures to weld using GTAW equipment
 - training and qualification requirements to weld using GTAW equipment
 - regulatory requirements pertaining to welding using GTAW process

Print Reading and Fabrication

- Interpretation of advanced welding symbols
- Interpretation of basic piping drawings
- Determining material and weld requirements from shop drawings

NOA topics covered in this section of training:

A-4 Organizes work

- A-4.02 Plans job tasks
- task requirements, their characteristics and applications
 - procedures to plan job tasks
- A-4.03 Organizes materials
- procedures to organize materials

A-5 Performs routine trade activities

- A-5.07 Finishes final product
- finishes
 - procedures to finish final product

B-6 Performs layout

- A-6.01 Develops templates
- templates, their characteristics and applications
 - procedures to develop templates
 - of emerging technologies related to developing templates

- A-6.02 Transfers dimensions from drawings to materials
- transferring dimensions from drawings to template material
 - procedures to transfer dimensions from drawings to materials

B-7 Fabricates components

- B-7.01 Prepares materials
- welding components and materials, their characteristics and applications
 - procedures to prepare welding components and materials
- B-7.02 Fits components for welding
- components for welding, their characteristics, applications
 - procedures to fit components for welding
 - regulatory requirements pertaining to tacking components
- B-7.03 Assembles components
- components, their characteristics, applications and operation
 - procedures to assemble components
 - regulatory requirements pertaining to assembling components for pressure vessels

Metallurgy and Material Designation

- Physical, chemical and mechanical properties of metals
- Identification of steels and metals by classification system and measurement
- Shop test used to identify metals
- Tempering, normalizing and annealing
- Pre-heat, interpass and post-heat considerations

NOA topics covered in this section of training:

A-4 Organizes work

- A-4.01 Uses documentation and reference material
- documentation and reference material, their characteristics and applications
 - use and complete documentation and reference material
- A-4.03 Organizes materials
- procedures to organize materials

Practical Areas of Instruction:

Special Welding and Cutting Processes

- Perform cutting procedures on plate - 30° bevel, contour and hole
- Use air carbon arc cutting to remove a backing plate
- Use plasma arc cutting and gouging process

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

- A-1.04 Maintains welding equipment
- welding equipment, their characteristics, applications and operation
 - maintain and store welding equipment

A-5 Performs routine trade activities

- A-5.03 Controls temperature of weldments
- effects of temperature on weldments
 - procedures to control temperature of weldments
 - WPS/WPDS pertaining to controlling temperature of weldments
- A-5.04 Stores welding consumables
- welding procedures to store welding consumables
 - consumables, their characteristics and applications
 - gas cylinders, their characteristics and applications

- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-13 Welds using flux cored arc welding (FCAW), metal cored arc welding (MCAW) and gas metal arc welding (GMAW) processes

D-13.01 Selects FCAW, MCAW and GMAW gas, equipment and consumables

- base metals, their characteristics and applications
- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation

D-13.02 Sets up FCAW, MCAW and GMAW equipment

- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation
- procedures to set up FCAW, MCAW and GMAW *equipment and components*
- training and qualification requirements pertaining to FCAW, MCAW and GMAW *equipment and components*
- regulatory requirements pertaining to FCAW, MCAW and GMAW *equipment and components*

D-13.03 Sets operating parameters for FCAW, MCAW and GMAW

- FCAW, MCAW and GMAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for FCAW, MCAW and GMAW equipment

D-13.04 Performs weld using FCAW, MCAW and GMAW equipment

- base metals, their characteristics and applications
- procedures to weld using GMAW, MCAW and FCAW equipment
- training and qualification requirements to weld using GMAW, MCAW and FCAW equipment

regulatory requirements pertaining to welding using GMAW, MCAW and FCAW processes

D-15 Welds using submerged arc welding (SAW) process

D-15.01 Selects SAW equipment and consumables

- base metals, their characteristics and applications
- SAW processes, equipment, components and consumables, their characteristics, applications and operation

D-15.02 Sets up SAW equipment

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set up SAW equipment and components
- training and qualification requirements pertaining to SAW equipment and components
- regulatory requirements pertaining to SAW equipment and components

D-15.03 Sets operating parameters for SAW

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for SAW equipment

D-15.04 Performs weld using SAW equipment

- base metals, their characteristics and applications
- procedures to weld using SAW equipment and components
- training and qualification requirements to weld using SAW equipment and components

Shielded Metal Arc Welding (SMAW)

- Weld 3/8 in. mild steel, vertical V-groove butt joints - E6010 root with E7018 fill and cap
- Weld 3/8 in. mild steel, horizontal V-groove butt joint - E6010
- Perform 4GF test using E7018

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 Maintains welding equipment

- welding equipment, their characteristics, applications and operation
- maintain and store welding equipment

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-12 Welds using shielded metal arc welding (SMAW) process

D-12.01 Selects SMAW equipment and consumables

- base metals, their characteristics and applications
- SMAW processes, equipment, **components** and consumables, their characteristics, applications and operation
- training and qualification requirements for SMAW
- regulatory requirements pertaining to SMAW equipment, **components** and consumables

D-12.02 Sets up SMAW equipment

- SMAW processes, equipment, **components** and their characteristics, applications and operation

D-12.03 Sets operating parameters for SMAW

- SMAW processes, equipment, **components** and their characteristics, applications and operation
- procedures to set operating parameters for SMAW equipment

D-12.04 – performs weld with SMAW equipment

- base metals, their characteristics and applications
- procedures to weld using SMAW equipment
- regulatory requirements pertaining to welding using SMAW process

Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW) and Metal Core Arc Welding (MCAW)

- Weld 3/8 in. mild steel, flat V-groove butt joint using GMAW
- Weld 3/8 in. mild steel, vertical V-groove butt joint using FCAW (fill and cap only)
- Weld 3/8 in. mild steel, horizontal T-joint, 3-pass using MCAW

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 Maintains welding equipment

- welding equipment, their characteristics, applications and operation
- maintain and store welding equipment

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-13 Welds using flux cored arc welding (FCAW), metal cored arc welding (MCAW) and gas metal arc welding (GMAW) processes

D-13.01 Selects FCAW, MCAW and GMAW gas, equipment and consumables

- base metals, their characteristics and applications
- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation

D-13.02 Sets up FCAW, MCAW and GMAW equipment

- FCAW, MCAW and GMAW processes, gas, *equipment, components* and consumables, their characteristics, applications and operation
- procedures to set up FCAW, MCAW and GMAW *equipment and components*
- training and qualification requirements pertaining to FCAW, MCAW and GMAW *equipment and components*
- regulatory requirements pertaining to FCAW, MCAW and GMAW *equipment and components*

D-13.03 Sets operating parameters for FCAW, MCAW and GMAW

- FCAW, MCAW and GMAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for FCAW, MCAW and GMAW equipment

D-13.04 Performs weld using FCAW, MCAW and GMAW equipment

- base metals, their characteristics and applications
- procedures to weld using GMAW, MCAW and FCAW equipment
- training and qualification requirements to weld using GMAW, MCAW and FCAW equipment
- regulatory requirements pertaining to welding using GMAW, MCAW and FCAW processes

D-15 Welds using submerged arc welding (SAW) process

D-15.01 Selects SAW equipment and consumables

- base metals, their characteristics and applications
- SAW processes, equipment, components and consumables, their characteristics, applications and operation

D-15.02 Sets up SAW equipment

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set up SAW equipment and components
- training and qualification requirements pertaining to SAW equipment and components
- regulatory requirements pertaining to SAW equipment and components

D-15.03 Sets operating parameters for SAW

- SAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for SAW equipment

D-15.04 Performs weld using SAW equipment

- base metals, their characteristics and applications
- procedures to weld using SAW equipment and components
- training and qualification requirements to weld using SAW equipment and components

Gas Tungsten Arc Welding (GTAW)

- Weld 3/8 in. mild steel, flat V-groove butt joint - open root

NOA topics covered in this section of training:

A-1 Maintains tools and equipment

A-1.04 – maintains welding equipment

- welding equipment, their characteristics, applications and operation A-5 Performs routine trade activities

A-5 Performs routine trade activities

A-5.03 Controls temperature of weldments

- effects of temperature on weldments
- procedures to control temperature of weldments
- WPS/WPDS pertaining to controlling temperature of weldments

A-5.04 Stores welding consumables

- welding procedures to store welding consumables
- consumables, their characteristics and applications
- gas cylinders, their characteristics and applications
- procedures to store gas cylinders
- regulatory requirements pertaining to storage of gas cylinders

A-5.05 Selects welding process and power source

- welding processes and power sources, their characteristics and applications
- procedures to select welding processes and power sources
- emerging technologies related to welding processes and power sources

A-5.06 Performs equipment start-up and shut-down\

- equipment start-up and shut-down
- procedures to start-up and shut-down equipment

D-14 Welds using gas tungsten arc welding (GTAW) process

D-14.01 Selects GTAW gas, equipment and consumables

- base metals, their characteristics and applications
- GTAW processes, gas, equipment, components and consumables, their characteristics, applications and operation

D-14.02 Sets up GTAW equipment

- GTAW processes, equipment, their components, characteristics, applications and operation
- procedures to set up GTAW equipment and components
- training and qualification requirements pertaining to GTAW equipment and components
- regulatory requirements pertaining to GTAW equipment and components

D-14.03 Sets operating parameters for GTAW

- GTAW processes, equipment, their components, characteristics, applications and operation
- procedures to set operating parameters for GTAW equipment

D-14.04 Performs weld using GTAW equipment

- base metals, their characteristics and applications
- procedures to weld using GTAW equipment
- training and qualification requirements to weld using GTAW equipment
- regulatory requirements pertaining to welding using GTAW process

Print Reading and Fabrication

- Using metal forming equipment to cut and form material

NOA topics covered in this section of training:

A-4 Organizes work

A-4.02 – Plans job tasks

- task requirements, their characteristics and applications
- procedures to plan job tasks

A-4.03 – Organizes materials

- procedures to organize materials

A-5 Performs routine trade activities

A-5.07 – Finishes final product

- finishes
- procedures to finish final product

B-6 Performs layout

A-6.01 Develops templates

- templates, their characteristics and applications
- procedures to develop templates
- of emerging technologies related to developing templates

A-6.02 Transfers dimensions from drawings to materials

- transferring dimensions from drawings to template material
- procedures to transfer dimensions from drawings to materials

B-7 Fabricates components

B-7.01 Prepares materials

- welding components and materials, their characteristics and applications
- procedures to prepare welding components and materials

B-7.02 Fits components for welding

- components for welding, their characteristics, applications
- procedures to fit components for welding
- regulatory requirements pertaining to tacking components

B-7.03 Assembles components

- components, their characteristics, applications and operation
- procedures to assemble components
- regulatory requirements pertaining to assembling components for pressure vessels

Saskatchewan Apprenticeship & Trade Certification Commission

2140 Hamilton St Regina SK S4P 2E3

Tel: (306) 787-2444

Fax: (306) 787-5105

Toll Free: 1-877-363-0536

web site: www.saskapprenticeship.ca

District Offices

Estevan (306) 637-4930

La Ronge (306) 425-4385

Moose Jaw (306) 694-3735

North Battleford (306) 446-7409

Prince Albert (306) 953-2632

Saskatoon (306) 933-8476

Swift Current (306) 778-8945

Yorkton (306) 786-1394