Welding Applied Certificate

PLAR Candidate Guide

Prior Learning Assessment and Recognition (PLAR)

Prior learning credit options at Saskatchewan Polytechnic

See Get Credit for What you Know for important information about all options to get credit for prior learning at Sask Polytech, including PLAR, transfer credit, Canadian Armed Forces credit, and equivalency credit.

How to navigate this document

This document contains links to other document sections or webpages. To return to where you were from another section in this document, press the *ALT* key and *left arrow* key at the same time. To return to this webpage from another webpage, close the other webpage or click back on the browser tab for this document.

Contents of this guide

This guide contains the following specific PLAR information and tools for this program

A. PLAR fees

B. PLAR eligibility and options

C. Dates when PLAR assessment is available

D. Special directions for this program

E. PLAR contact person

F. Self-rating course outlines

A. PLAR fees

Fees for PLAR challenges are set to cover our costs for consultation, assessment, and related administrative tasks. PLAR fees are non-refundable and non-transferrable.

The PLAR fees policy is subject to change for each new academic year. Please see the **Cost** section on the PLAR webpage for current fee information.

B. PLAR eligibility and options

To be eligible for PLAR for courses in this program, you must first apply for admission and be accepted into the program. You must also consult with the PLAR contact person and be approved for PLAR assessment. Proof of may be required for some applicants. English language proficiency may be required for some applicants.

Course prerequisites and corequisites

Some courses have one or more other courses that must be completed first (prerequisite) or at the same time (corequisite). See course outlines in this guide to identify any pre- or co-requisites for each course. Discuss with your PLAR contact person how to deal with courses with corequisites.

Block assessment

Some programs may assess a cluster of courses together in one block, which may save you time and effort. Ask the PLAR contact person whether there are any block assessment options in this program.

C. Dates when PLAR assessment is available

PLAR assessment for this program is available from Sept 1 to June 15 in each academic year.

All PLAR assessments must be completed by June 15 of each academic year.

D. Special directions for this program

1. **Review** the PLAR process and FAQs and the information in this guide.
2. **Self-rate** your learning for each course using the Course Outlines in this guide.
3. **Consult** with the PLAR contact person for PLAR approval. Be prepared to provide your resume, course self-ratings (see section F), and a partially completed PLAR application. If you are approved for PLAR, the contact person will sign your PLAR application and explain next steps.
4. **Apply** for admission to the program. See directions for applying.
5. **Register** for PLAR at Registration/Enrolment Services once you have signed approval on your PLAR Application Form. The PLAR fee will be added to your student account.
6. **Finalize** assessment plan with your assigned assessor**.**
7. **Complete** assessment before your PLAR registration expires.

E. PLAR contact person

Contact the person below to arrange a consultation **after** you have read this guide and general PLAR information **and** rated yourself for each course (see next session). Consultation may be by phone, online, or in person. Be prepared to provide your resume, course self-ratings, and a partially completed PLAR application. If agreement is reached to go ahead with PLAR, the contact person will sign approval on your PLAR application and explain the next steps. Admission to the program is required before you can register for PLAR.

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F. Self course outlines

Clicking on a course code below opens a page where you can rate yourself on the knowledge and skills assessed for PLAR credit. For Arts & Sciences courses, clicking on the course code opens another PLAR guide. The PLAR contact person for this program will refer you to another person to discuss PLAR for courses delivered by Arts & Sciences or another program/department.

COURSE CODE	COURSE NAME	Delivered by another department/program
COMM 127	Fundamental Communication Skills	Arts & Sciences
MATH 125	Welding Mathematics	Arts & Sciences
METL 100	Metallurgy and Heat Treatment of Metals	
PRINT 114	Blueprint Interpretation	
SFTY 114	Trade Safety	
WELD 104	Cutting Processes	
WELD 121	Gas Metal Arc Welding 1	
WELD 122	Gas Tungsten Arc Welding2	
WELD 123	Oxy-Welding	
WELD 124	Shielded Metal Arc Welding 1	
WELD 125	Shielded Metal Arc Welding 2	

COURSE CODE	COURSE NAME	Delivered by another department/program
WLDR 126	Shielded Metal Arc Welding 3	
WORK 113	Work Experience	

MATH 125 - Welding Mathematics

You will learn math concepts commonly used in the Welding trade. After reviewing basic mathematics and basic equations, you will solve applied percent and proportion problems. You will perform Imperial and SI conversions, and calculate the perimeter, area and volume of many common shapes, as well as use Pythagorean theorem. Trade applications include using protractors and steel tapes as well as calculating stretchouts and economical layout of various plates.

Credit unit(s): 2.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Use basic mathematics to solve trade-related problems.			
2. Use basic equations to solve trade-related problems.			
3. Practice Imperial and Metric measurement conversions.			
4. Calculate perimeter, area and volume of common and irregular shapes.			
5. Practice welding trade calculations.			

METL 100 – Metallurgy & Heat Treatment of Metals

You will become familiar with the physical and chemical properties of commonly used metals in the welding trade. You will study the effect of the heating and cooling cycle involved in welding operations (with particular attention given to the heat affected zone). You will also review the use of heat to correct distortion and to change the physical properties of metals, and the classification system for identifying metal.

Credit unit(s): 2.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Identify ferrous metals.			
2. Identify non-ferrous metals.			
3. Identify structural metals.			
4. Describe the physical, chemical, and mechanical properties of metals.			
5. Describe metal heat processes.			
6. Describe the techniques to control and correct heat distortion.			

PRNT 114 – Blueprint Interpretation

You will develop your ability to read and interpret basic welding and fabricating drawings. The course covers the basic elements of a blueprint, weld symbols, joint types, structural shapes, developing a bill of material and using the Imperial and metric systems of measurement.

Credit unit(s): 2.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Develop blueprints			
2. Develop working drawings			
3. Interpret welding symbols			
4. Set up weld joints			
5. Calculate material required			

SFTY 114 – Trade Safety

You will learn safe working practices and study regulations related to the trade.

Credit unit(s): 1.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Describe firefighting equipment and procedures.			
2. Prepare work area for welding operations.			
3. Transport welding supplies.			
4. Store welding supplies.			
5. Describe personal protective equipment and safety practices.			
6. Demonstrate safe shop work practices for housekeeping, equipment, and tool use.			
7. Describe WHMIS.			
8. Interpret occupational health and safety regulations.			
9. Describe safe material handling procedures and equipment.			

WELD 104 - Cutting Processes

You will acquire skill in using freehand and guided methods for cutting mild steel. The freehand method is used to make straight cuts in 14 gauge and straight cuts, bevel cuts and pierce holes in the plate. The guided method is used to do straight cuts, bevel cuts, and cut circles from plate. You will also be introduced to plasma arc cutting.

Credit unit(s): 4.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Assemble oxyacetylene cutting equipment			
2. Cut straight lines and bevels freehand			
3. Cut straight lines and bevels using guides			
4. Cut shapes freehand			
5. Use circle-cutting attachments			
6. Cut gauge metal freehand			
7. Cut gauge metal using plasma arc			

WLDR 121 - Gas Metal Arc Welding 1

You will be introduced to the gas metal arc welding process. The course content includes setting and adjusting the welding equipment for welding steel and aluminum. You will also receive an introduction to flux core welding.

Credit unit(s): 1.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Set up GMAW equipment for mild steel.			
2. Select type of metal transfer.			
3. Set up GMAW equipment for aluminum welding.			
4. Set up GMAW equipment for flux core welding.			

WLDR 122 - Gas Metal Arc Welding 2

Building on the theory learned in WLDR 121 (Gas Metal Arc Welding 1), you will develop practical skills for welding steel and aluminum, and flux core welding.

Credit unit(s): 6.0
Pre and Co Requisites: WLDR 121
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Run beads in flat position.			
2. Perform multi-pass fillet welds in horizontal position.			
3. Perform multi-pass fillet welds in vertical position.			
4. Perform multi-pass fillet welds in flat position.			
5. Perform multi-pass butt welds in flat position.			
6. Perform multi-pass butt welds in vertical position.			
7. Perform multi-pass fillet welds on aluminum.			
8. Run beads with flux core on mild steel.			

WLDR 123 – Oxy-Welding

You will learn how to safely operate and maintain oxyacetylene equipment used for welding. The course includes the types of flames and their chemistry, the selection of filler metal and a comparison of fusion welding to braze welding.

Credit unit(s): 5.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Operate oxygen/acetylene equipment.			
2. Select filler rods.			
3. Run beads without filler.			
4. Run flat beads with filler rod.			
5. Perform fusion weld butt joints.			
6. Use brazing rods.			

WELD 124 - Shielded Metal Arc Welding 1

You will be introduced to the shielded metal arc welding (SMAW) process. The course content includes setting and adjusting the welding equipment for welding steel and electrode selection.

Credit unit(s): 3.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Set up metal arc welding equipment.			
2. Select electrodes.			
3. Perform multi-pass fillet welds in horizontal position.			

WELD 125 - Shielded Metal Arc Welding 2

You will continue developing practical skills in using the SMAW process (including vertical fillets).

Credit unit(s): 5.0
Prerequisites: WLDR 124
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Perform fillet welds in vertical position.			
2. Perform butt welds in flat position 14-gauge metal.			
3. Perform lap welds.			

WELD 126 - Shielded Metal Arc Welding 3

Building on the knowledge gained in WLDR 124 (Shielded Metal Arc Welding 1) and WLDR 125 (Shielded Metal Arc Welding 2), you will continue to develop practical skills for welding in the flat, vertical and horizontal positions.

Credit unit(s): 3.0
Prerequisites: WLDR 125
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Perform multi-pass fillet welds in vertical position.			
2. Perform multi-pass butt welds in flat position.			
3. Describe cast iron welding techniques.			

WORK 113 – Work Experience

You will participate in a work placement to further your understanding of workplace employer needs. You will become familiar with the industry and gain practical experience in the welding field.

Credit unit(s): 0.0
Prerequisites: none
Corequisites: none
Equivalent course(s): none

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Demonstrate employability skills needed in the workplace.			
2. Apply technical/practical skills.			