

# **Welding Certificate & Applied Certificate**

## **PLAR Candidate Guide**

Prior Learning Assessment and  
Recognition (PLAR)



Tomorrow  
in the making.

## Copyright

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Saskatchewan Polytechnic

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The Welding certificate program is dedicated to removing barriers and broadening the access to programs at Saskatchewan Polytechnic. We believe that adults acquire knowledge and skills through life and work experience that may align with courses within our programs.

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## **Why consider a PLAR assessment?**

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PLAR refers to the combination of flexible ways of evaluating people's lifelong learning, both formal and informal against a set of established standards. You can receive academic credit for your relevant lifelong learning. The Welding certificate program recognizes prior learning in a number of ways.

We recognize:

- Previous formal learning from an accredited training institution through transfer of credit.
- Previous informal learning or experiential learning through a comprehensive prior learning and recognition process.

## **What are the PLAR options?**

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To be eligible for PLAR, an applicant must first register or already be registered as a Saskatchewan Polytechnic student.

### **Option A: Individual course challenge**

If you have two or more successful years in the welding field, and have learned the skills and knowledge for **one or more** of the Welding courses, you may apply to be assessed for each applicable course.

#### **Fees:**

- There will be a charge for each individual course assessment.
- For a listing of the specific PLAR fees, check the [PLAR database](#) or call Saskatchewan Polytechnic and ask to speak to the PLAR advisor/counsellor assigned to the Welding program at: 1-866-467-4278.

## **How many courses can be challenged through PLAR in the Welding Certificate program?**

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Currently we have 16 out of 16 certificate courses and 12 out of 13 applied certificate courses with PLAR challenges available. There is no limit. You may challenge as many of these courses as you are able to prove prior skills and knowledge through assessment.

## Which courses are PLAR-ready?

Welding Certificate Program Profile			
COURSE CODE	COURSE NAME	PLAR Challenge(s) available through program	PLAR Challenge(s) not available
COMM 127	Industry Communications	✓*	
EQPT 103	Fabrication Equipment	✓	
MATH 125	Welding Mathematics	✓*	
METL 100	Metallurgy and Heat Treatment of Metals	✓	
PRNT 101	Blueprint Interpretation	✓*	
PROJ 102	Shop Projects	✓	
PRAC 184	Work Experience (optional)	✓	
QC 100	Quality Assurance	✓	
SFTY 103	Welding Safety	✓	
WELD 103	Oxy-acetylene Welding	✓	
WELD 104	Cutting Processes	✓	
WELD 105	Gas Metal Arc Welding	✓	
WELD 106	Gas Tungsten Arc Welding	✓	
WELD 107	Shielded Metal Arc Welding 1	✓	
WELD 108	Shielded Metal Arc Welding 2	✓	
WELD 109	Shielded Metal Arc Welding 3	✓	

\*Note\*: Some courses common to multiple programs at Saskatchewan Polytechnic (i.e. computers, communications, math, and sciences) are managed by the Department of Arts & Sciences. To see if these shared courses in your program are PLAR-ready, follow the link on the course code. If it is PLAR-ready contact:

Contacts:  
 Stephanie Morrison, Department Head  
 P. 306-775-7677  
[Stephanie.Morrison@saskpolytech.ca](mailto:Stephanie.Morrison@saskpolytech.ca)

Welding Applied Certificate Program Profile			
COURSE CODE	COURSE NAME	PLAR Challenge(s) available through program	PLAR Challenge(s) not available
COMM 127	Industry Communications	✓*	
MATH 125	Welding Mathematics	✓*	
METL 100	Metallurgy and Heat Treatment of Metals	✓	
PRNT 114	Blueprint Interpretation	✓	
SFTY 114	Trade Safety	✓	
WELD 104	Cutting Processes	✓	
WLDR 121	Gas Metal Arc Welding 1	✓	
WLDR 122	Gas Metal Arc Welding 2	✓	
WLDR 123	Oxy-Welding	✓	
WLDR 124	Shielded Metal Arc Welding 1	✓	
WLDR 125	Shielded Metal Arc Welding 2	✓	
WELD 126	Shielded Metal Arc Welding 3	✓	
WORK 113	Work Experience		✓

\*Note\*: Some courses common to multiple programs at Saskatchewan Polytechnic (i.e. computers, communications, math, and sciences) are managed by the Department of Arts & Sciences. To see if these shared courses in your program are PLAR-ready, follow the link on the course code. If it is PLAR-ready contact:

Contacts:  
 Stephanie Morrison, Department Head  
 P. 306-775-7677  
[Stephanie.Morrison@saskpolytech.ca](mailto:Stephanie.Morrison@saskpolytech.ca)

### **Is PLAR available at any time of the year?**

PLAR challenges are currently being offered when requested.

### **Is it *easier* to challenge a course through PLAR or take the course?**

Neither is easier. By using PLAR you may reduce the repetition of studying information that you already know. The PLAR process allows you to demonstrate knowledge you already have.

PLAR is not an easy way to certification, rather a “different” way to obtain certification. Your personal level of skill and experience will dictate which courses you choose to challenge. The self-audit section found later in this guide will help you decide if you have a good match of skill and knowledge for a specific course.

## **Methods of assessing prior learning**

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Assessment methods measure an individual's learning against course learning outcomes. The assessment methods listed below are the ones most commonly used, but other forms of flexible assessment may be considered. These assessments may include one or a combination of the following assessment tools:

- product validation & assessment
- challenge exam
- standardized tests
- performance evaluations (including skill demonstrations, role plays, clinical applications, case studies)
- interviews and oral exams
- equivalency (evaluations of learning from non-credit training providers)
- evidence or personal documentation files (providing evidence of learning from life and work experiences and accomplishments)

## **If I live out of town, do I have to travel to a main campus to do PLAR?**

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There will be times that you will need to meet with the program on campus. However, we will try to keep travel to a minimum.

## **What if I have a disability & need equity accommodations?**

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At Saskatchewan Polytechnic, we understand that sometimes services must be provided to students in a variety of ways to achieve the goals of fair representation. Therefore, the range of services provided for Education Equity students is as diverse as the needs of those students. We strive for equity (not uniformity) and provide varied services for students with differing needs. If more information is required, please contact a Saskatchewan Polytechnic counsellor at a campus closest to you or refer to the Saskatchewan Polytechnic website: <http://saskpolytech.ca/student-services/support/accessibility-services.aspx>



## Are there other methods to gain Saskatchewan Polytechnic course credits for prior learning?

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### Transfer Credit

Yes, Saskatchewan Polytechnic will grant credit for previous training that is similar in content, objectives, and evaluation standards to Saskatchewan Polytechnic training. Transfer of credit is different from the PLAR process. Transfer Credit guidelines may be found at:

<http://saskpolytech.ca/admissions/resources/transfer-credit.aspx>

It is the student's responsibility to check with [Registration Services](#) for specific campus procedures on this policy. For specific information and guidelines regarding transfer of credit, contact a [Saskatchewan Polytechnic educational counsellor](#).

### Equivalency Credit

Equivalency credit refers to the application of credit you may have earned in a previously taken Saskatchewan Polytechnic course to your current Saskatchewan Polytechnic course. Apply at registration services for *equivalency credit*. This process should also be completed prior to your PLAR challenge. If these credits cannot be used for *equivalency credit*, you may use these accredited courses as part of your evidence for your PLAR challenge.

### Contact us

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If more information is required, please contact a designated PLAR counsellor at a campus closest to you.

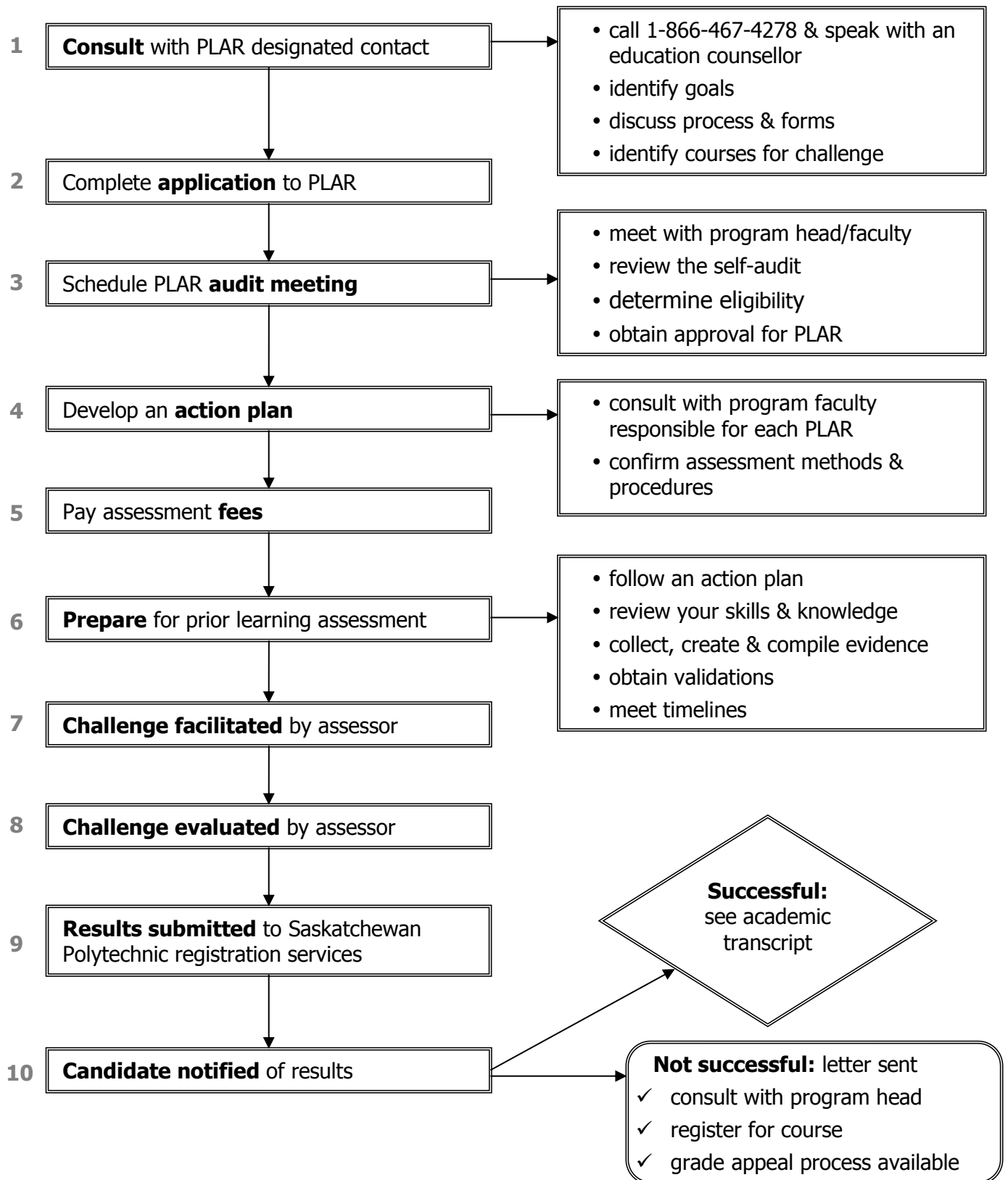
Saskatchewan Polytechnic in Moose Jaw  
Counselling Services, Room 2.203  
306-691-8311 or 306-691-8310  
[StudentServicesMooseJaw@saskpolytech.ca](mailto:StudentServicesMooseJaw@saskpolytech.ca)

Saskatchewan Polytechnic in Prince Albert  
Counselling Services, Room F203 (Technical Centre)  
306-765-1611  
[StudentServicesPrinceAlbert@saskpolytech.ca](mailto:StudentServicesPrinceAlbert@saskpolytech.ca)

Saskatchewan Polytechnic in Regina  
Counselling Services, Room 228  
306-775-7436  
[StudentServicesRegina@saskpolytech.ca](mailto:StudentServicesRegina@saskpolytech.ca)

Saskatchewan Polytechnic in Saskatoon  
Counselling Services, Room 114  
306-659-4050  
[StudentServicesSaskatoon@saskpolytech.ca](mailto:StudentServicesSaskatoon@saskpolytech.ca)

## Prior Learning Assessment and Recognition process



## **Guiding principles for developing a PLAR evidence file**

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1. As you begin the PLAR process you will be advised if any evidence is required. This will be identified in your [action plan](#). Check with the PLAR designated contact **before** you begin to gather evidence.
2. Evidence must be valid and relevant. Your evidence must match the learning outcomes identified for each course.
  - It is your responsibility to create, collect and compile relevant evidence – if required.
3. Learning must be current within the last five years.
4. The evidence should demonstrate the skills and knowledge from your experiences.
5. The learning must have both a theoretical and practical component.

## **Types of evidence**

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There are three types of evidence used to support your PLAR request:

1. Direct evidence – what you can demonstrate for yourself.
2. Indirect evidence – what others say or observe about you.
3. Self-evidence – what you say about your knowledge and experience.

Ensure that you provide full evidence to your Welding faculty assessor so that your prior learning application is assessed appropriately. Well organized, easy to track evidence will also ensure that none of the evidence is missed or assessed incorrectly.

Here are some examples of evidence that you may be requested to submit as part of your evidence file (if required):

- experience (activity) outlines
- workplace validations
- work samples
- photos of projects
- photos of workplaces
- videotapes

All documents that are submitted to Saskatchewan Polytechnic may be returned to the student after the final results have been given and the grade appeal deadline of seven days has passed. A copy of transcripts and certificates may be included in your evidence file, but be prepared to show original documents at the PLAR audit meeting for validation.

## How long will it take to prepare evidence for PLAR?

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Since the requirements are different for each course, and each candidate has different experiences, the amount of time it takes to prepare your evidence will vary.

## Steps to complete a self-audit

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1. Read through the levels of competence as listed below.

<b>Mastery:</b>	I am able to demonstrate the learning outcome well enough to teach it to someone else.
<b>Competent:</b>	I can work independently to apply the learning outcome.
<b>Functional:</b>	I need some assistance in using the outcome.
<b>Learning:</b>	I am developing skills and knowledge for this area.
<b>None:</b>	I have no experience with the outcome.

### Learning outcomes

For each learning outcome listed, please self-evaluate your competency levels and record in the appropriate column for each self-audit.

2. Take a few minutes and read through the following self-audit for each course you are interested in as a PLAR candidate.
3. Check your level of competence as you read through each of the learning outcomes for each course. The information will help you in your decision to continue with your PLAR application.
4. In order to be successful in a PLAR assessment, your abilities must be at the competent or mastery level for the majority of the learning outcomes. Some things to consider when determining your level of competence are:
  - How do I currently use this outcome?
  - What previous training have I had in this outcome: workshops, courses, on-the-job?
  - What personal development or volunteer experience do I have in this area?

Be prepared to explain the reason you chose this level if asked by an assessor.

5. Bring the completed self-audit to a consultation meeting with the program head or faculty member in [step 3 – PLAR process](#) of the candidate process for prior learning assessment.

## Self-audit guide(s)

### EQPT 103 – Fabrication Equipment

The course covers the proper use and maintenance of the hand tools and the shop equipment used in welding and fabricating shops in industry.

**Credit unit(s):** 4.0

<b>EQPT 103 – Fabrication Equipment</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
1. Use welding shop hand tools.					
2. Use layout tools.					
3. Operate power-drilling equipment.					
4. Use taps and dies.					
5. Operate metal shears.					
6. Use metal bending equipment.					
7. Use metal rolling equipment.					
8. Operate power saws.					
9. Operate grinding equipment.					
10. Operate ironworker (metal worker).					

### PLAR assessment methods

PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Program Head has signed your [PLAR application form](#) and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## METL 100 – Metallurgy and 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

<b>METL 100 – Metallurgy and Heat Treatment of Metals</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
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.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## PRAC 184 – Work Experience

To become familiar with the industry and gain practical experience in the welding field, you will spend one week in a welding/fabricating shop. The course is optional and is subject to shop availability.

**Credit unit(s):** 0.0

<b>PRAC 184 – Work Experience</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Demonstrate employability skills.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## 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**

<b>PRNT 114 – Blueprint Interpretation</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
1. Develop blueprints.					
2. Develop working drawings.					
3. Interpret welding symbols.					
4. Set up weld joints.					
5. Calculate material required.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources



## PROJ 102 – Shop Projects

Constructing various welding projects will help you develop welding and steel fabricating skills.

**Credit Units:** 4.0

**Equivalent Courses:** PROJ 180

PROJ 102 – Shop Projects <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Plan a project.					
▪ Interpret blueprints					
▪ Determine work sequence					
▪ Calculate materials					
2. Prepare materials.					
▪ Cut materials to size					
▪ Prepare materials for required joints					
3. Complete fabrication project.					
▪ Fit all materials					
▪ Tack weld all joints					
▪ Finish weld all required joints					
▪ Complete required finishing procedures					
▪ Clean entire work area					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers

#### 2. Lab demonstration and/or industry validation

Generally most candidates will be required to carry out a performance test as outlined to demonstrate competence in the assigned welds.

#### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

## QC 100 – Quality Assurance

You will study the role of quality and elements of quality assurance in today's welding industry.

**Credit unit(s):** 1.0

<b>QC 100 – Quality Assurance</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
1. Describe the principles and benefits of a quality assurance program.					
2. Describe documents typical of a quality assurance program such as: codes, standards, work procedures, weld procedures, non-conformance reports, mill test reports, heat numbers.					
3. Describe Lean Manufacturing.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## SFTY 103 – Welding Safety

Your studies will focus on general safety as it applies to the welding trade. You will learn how to use firefighting equipment, organize a shop for safe welding operation and safely transport and store welding supplies. You will also learn basic rigging techniques. You will study and receive certification in WHMIS and be introduced to the articles of Occupational Health and Safety Act that apply to the trade.

Note: Additions to the learning outcomes have been provided for clarification to the candidate.

**Credit units:** 2.0

<b>SFTY 103 – Welding Safety</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Describe fire-fighting equipment and procedures.					
<ul style="list-style-type: none"> <li>▪ Describe the types of extinguishers and their application, types of fires and fire prevention strategies</li> </ul>					
2. Prepare work area for welding operations.					
3. Transport welding supplies.					
4. Store welding supplies.					
5. Select protective equipment.					
6. *Perform emergency first aid.					
7. *Perform lay rescuer adult CPR.					
8. Practice welding shop housekeeping.					
9. *Describe WHMIS.					
10. Describe Occupational Health and Safety (as this applies to welding situations in Canada).					
11. Apply rigging techniques. Equipment knots safety.					

\*Requires proof of current, valid certification.

## PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Letter of validation from employers
- Industry certification tickets (WHMIS, OHS, First Aid, etc.)

### 2. Lab demonstration and/or validation

Generally most candidates will be required to carry out a performance test as outlined to demonstrate competence in the assigned welds.

### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

## Resources

SFTY 103 Course Manual

Metal Trades Handbook

## SFTY 114 – Trade Safety

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

**Credit unit(s): 1**

<b>SFTY 114 – Trade Safety</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
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.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## WELD 103 – Oxy-acetylene Welding

You will learn how to safely operate and maintain oxy-acetylene equipment as used in the welding trade. The course covers the types of flames and their chemistry, the selection of filler metal and a comparison of fusion and braze welding. You will also develop practical skills in fusion welding of 14 gauge steel in the flat and vertical positions, braze welding on mild steel in the flat position and braze welding on cast iron in the vertical position.

**Credit Units:** 6.0

<b>WELD 103 – Oxy-acetylene Welding</b>	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
<b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else.					
<b>Competent:</b> I can work independently to apply the outcome.					
<b>Functional:</b> I need some assistance in using the outcome.					
<b>Learning:</b> I am developing skills and knowledge for this area.					
<b>None:</b> I have no experience with the outcome.					
1. Operate oxygen/acetylene welding equipment.					
▪ Knowledge of equipment and safety					
▪ Assembly					
2. Select filler rods.					
3. Run beads without filler rod.					
4. Run beads with filler rod.					
5. Fusion weld butt joints.					
6. Use brazing rods.					
7. Fusion weld pipe.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB)

## **2. Lab demonstration and/or industry validation**

Generally most candidates will be required to carry out a performance test as outlined to demonstrate competence in the assigned welds.

## **3. Structured interview**

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

## **Resources**

WELD 103 Course Manual

Modern Welding Textbook

## 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 Units:** 4.0

<b>WELD 104 – Cutting Processes</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Operate oxygen/acetylene cutting equipment. Note: not necessary if the candidate has completed WELD 103 LO 1					
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 material freehand.					
7. Cut metal using plasma.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built/cut (verified to support authenticity)
- Samples of cuts (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB...)

#### 2. Lab demonstration and /or industry validation

Generally most candidates will be required to carry out a performance test as outlined to demonstrate competence in the assigned cuts.

#### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

### Resources

WELD 104 Course Manual

Modern Welding Textbook



## WELD 105 – Gas Metal Arc Welding (GMAW)

You will be introduced to the gas metal arc welding process that is most commonly called MIG welding. The course content includes setting and adjusting welding equipment for MIG welding of steel and aluminum, and selecting the mode of metal transfer, the size and type of filler wire and the type of shielding gas to be used. You will learn how to make MIG fillet welds in the flat, vertical and horizontal positions, and full strength groove welds in the flat and vertical positions. You will also become familiar with flux core welding.

**Credit Units:** 8.0

<b>WELD 105 – Gas Metal Arc Welding (GMAW)</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Set up GMAW equipment for mild steel.					
<ul style="list-style-type: none"> <li>▪ Knowledge of the process, equipment, safety filler wires, and shielding gasses</li> </ul>					
2. Select type of metal transfer.					
3. Run beads on flat position.					
4. Perform multi-pass fillet welds in horizontal position.					
5. Perform multi-pass fillet welds in vertical position.					
6. Perform multi-pass fillet welds in flat position.					
7. Perform multi-pass butt welds in flat position.					
8. Perform multi-pass butt welds in vertical position.					
9. Set up GMAW equipment for aluminum welding.					
10. Perform multi-pass fillet welds on aluminum in horizontal position.					
11. Set up flux core equipment.					
12. Run beads with flux core.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB...)

## **2. Lab demonstration and/or industry validation**

Generally most candidates will be required to carry out a performance test as outlined to demonstrate competence in the assigned welds.

## **3. Structured interview**

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

## **Resources**

WELD 105 Course Manual

Modern Welding Textbook

## WELD 106 – Gas Tungsten Arc Welding (GTAW)

You will be introduced to the gas tungsten arc welding process that is most commonly referred to as TIG welding. You will learn how to set up and adjust TIG welding equipment required for welding mild steel and aluminum. The course covers the types of electrodes, shielding gases and electrical current types used in TIG welding. You will develop practical skills in welding mild steel, stainless steel and aluminum in the flat position.

**Credit Units:** 2.0

<b>WELD 106 – Gas Tungsten Arc Welding (GTAW)</b>					
<b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
<b>Competent:</b> I can work independently to apply the outcome.					
<b>Functional:</b> I need some assistance in using the outcome.					
<b>Learning:</b> I am developing skills and knowledge for this area.					
<b>None:</b> I have no experience with the outcome.					
1. Set up GTAW equipment for welding steel and aluminum.					
<ul style="list-style-type: none"> <li>▪ Knowledge of process, equipment, power sources, gasses and electrodes</li> </ul>					
2. Run beads without filler rod.					
3. Run beads in flat position with filler rod (ferrous).					
4. Butt weld stainless steel in flat position.					
5. Run beads in flat position with filler rod (non ferrous).					
6. Butt weld aluminum in flat position.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB)

#### 2. Lab demonstration and/or industry validation

Generally most candidates will be required to carry out performance test as outlined to demonstrate competence in the assigned welds.

#### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and tungsten and filler rod selection.

### Resources

1. WELD 106 Course Manual
2. Modern Welding Textbook

## WELD 107 – Shielded Metal Arc Welding 1

You will be introduced to the Shielded Metal Arc Welding (SMAW) process and study the types of power sources, electrical characteristics of welding circuits, and mild steel and low alloy electrodes. You will develop your skills in welding beads in the flat, vertical and horizontal positions and producing fillet welds in the horizontal position.

**Credit unit(s):** 8.0

<b>WELD 107 – Shielded Metal Arc Welding 1</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Set up Shielded Metal Arc Welding (SMAW) equipment.					
2. Interpret electrode classification.					
3. Surface build up on plate, flat, using E7014 and E7018.					
4. Weld ¼" mild steel, flat, butt joint square groove using E6010/11.					
5. Weld 14 gauge, horizontal, lap joint, fillet using E6010/11.					
6. Weld 14 gauge, horizontal, T joint, fillet weld, using E6010/11.					
7. Weld 14 gauge, flat, butt joint, square groove weld using E6010/11.					
8. Weld ¼" mild steel, horizontal, T joint, fillet weld using E7024.					
9. Weld ¼" mild steel, horizontal, T joint, fillet using E7018.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## WELD 108 – Shielded Metal Arc Welding 2

You will continue developing skill in using the SMAW process. The course content includes vertical and overhead fillets, arc air gouging and other common applications of the SMAW process.

**Credit Units:** 11.0

<b>WELD 108 – Shielded Metal Arc Welding Part 2</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Fillet weld in vertical position.					
2. Fillet weld in overhead position.					
3. Butt weld in flat position.					
4. Butt weld in vertical position.					
5. Lap weld.					
6. Operate air arc torch.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB)

#### 2. Lab demonstration and /or industry validation

Generally most candidates will be required to carry out performance test as outlined to demonstrate competence in the assigned welds.

#### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and tungsten and filler rod selection.

### Resources

WELD 106 Course Manual

Modern Welding Textbook

## WELD 109 – Shielded Metal Arc Welding 3

You will continue developing skill in using the SMAW process. The course content includes vertical and overhead fillets, arc air gouging and other common applications of the SMAW process.

**Credit Units:** 8.0

<b>WELD 109 – Shielded Metal Arc Welding Part 3</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
1. Multi-pass fillet welds in horizontal position.					
2. Multi-pass fillet welds in vertical position.					
3. Multi-pass butt welds flat positions.					
4. Multi-pass butt welds in vertical position.					
5. Multi-pass butt welds in horizontal position.					
6. Describe cast iron welding techniques.					

### PLAR assessment methods

If you qualify for PLAR, you may be asked to demonstrate your learning in one or more of the following ways. Be prepared to discuss the expectations during a consultation meeting.

#### 1. Evidence file

If the candidate has significant experience in welding they may be able to produce evidence to support their challenge.

- Pictures of various items they have built (verified to support authenticity)
- Samples of welds (verified to support authenticity)
- Letters of validation from employers
- Industry certification tickets (pressure/CWB)

#### 2. Lab demonstration and/or industry validation

Generally most candidates will be required to carry out performance test as outlined to demonstrate competence in the assigned welds.

#### 3. Structured interview

The candidate may be interviewed to orally test their knowledge of equipment, process and electrode selection.

### Resources

WELD 109 Course Manual

Modern Welding Textbook

## 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

<b>WELD 121 – Gas Metal Arc Welding 1</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	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.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## 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

**Prerequisite(s):** WLDR 121(concurrent)

<b>WLDR 122 – Gas Metal Arc Welding 2</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	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.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.



## 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

<b>WLDR 123 – Oxy-Welding</b>	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
<b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else.					
<b>Competent:</b> I can work independently to apply the outcome.					
<b>Functional:</b> I need some assistance in using the outcome.					
<b>Learning:</b> I am developing skills and knowledge for this area.					
<b>None:</b> I have no experience with the outcome.					
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.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## WLDR 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

<b>WLDR 124 – Shielded Metal Arc Welding 1</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
1. Set up metal arc welding equipment.					
2. Select electrodes.					
3. Perform multi-pass fillet welds in horizontal position.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

## WLDR 125 - Shielded Metal Arc Welding 2

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

**Prerequisite(s):** WLDR 124(concurrent)

<b>WLDR 125 - Shielded Metal Arc Welding 2</b>	<b>Mastery</b>	<b>Competent</b>	<b>Functional</b>	<b>Learning</b>	<b>None</b>
<b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else.					
<b>Competent:</b> I can work independently to apply the outcome.					
<b>Functional:</b> I need some assistance in using the outcome.					
<b>Learning:</b> I am developing skills and knowledge for this area.					
<b>None:</b> I have no experience with the outcome.					
1. Set up metal arc welding equipment.					
2. Select electrodes.					
3. Perform multi-pass fillet welds in horizontal position.					

### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.

### WLDR 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

**Prerequisite(s):** WLDR 125(concurrent)

<b>WLDR 126 – Shielded Metal Arc Welding 3</b> <b>Mastery:</b> I am able to demonstrate it well enough to teach it to someone else. <b>Competent:</b> I can work independently to apply the outcome. <b>Functional:</b> I need some assistance in using the outcome. <b>Learning:</b> I am developing skills and knowledge for this area. <b>None:</b> I have no experience with the outcome.	Mastery	Competent	Functional	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.					

#### PLAR assessment methods

PLAR assessment methods PLAR for this course may be under development. If your results for the self-audit above are positive, contact the consultant(s) listed above for more information. If this course is ready for a PLAR challenge, assessment methods will be clarified during consultation with the Department Head. Do not prepare for assessment until the Department Head has signed your PLAR application form and you have registered to PLAR this course.

#### Resources

If you qualify to PLAR this course, ask the consultant to recommend any useful resources to review prior to assessment, which may include the following. Check for related resources from online and other sources. Purchasing resources from the Sask Polytech Bookstore is optional.