Industrial Mechanics 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.

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

Review the PLAR process and FAQs and the information in this guide.

Self-rate your learning for each course using the Course Outlines in this guide.

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.

Apply for admission to the program. See directions for applying.

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.

Finalize an assessment plan with your assigned assessor**.**

Complete assessment before your PLAR registration expires.

E. PLAR contact person

Contact one of the Program Heads below to arrange a consultation **after** you have read this guide and general PLAR information **and** rated yourself for each course (see next section). 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-rating 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
DRFT 183	Drafting and Blueprint Reading	
HYDR 100	Hydraulics	
INDM 101	Belts, Chains, Shafts and Gears	
INDM 104	Couplings, Clutches and Brakes	
INDM 105	Pneumatics and Compressors	
INDM 112	Machine Installation and Shaft Alignment	
INDM 113	Lubrication, Seals and Gaskets	
INDM 114	Rigging, Hoisting, Lifting and Safety	
INDM 115	Bearings	
MATH 181	Industrial Mechanics Certificate Trade Mathematics	Arts & Sciences
METL 101	Metallurgy and Fabrication	
PIPE 100	Pumps and Pipe Fitting	
PRAC 182	Work Experience	

COURSE CODE	COURSE NAME	Delivered by another department/program
TOOL 101	Machine Tool Operation	
TOOL 102	Hand Cut Tools and Threading	
TOOL 103	Assembly and Measuring Tools	
TOOL 104	Power Tools	
WLDR 137	Oxy Fuel, Cutting and Welding, Gas Metal Arc Welding (GMAW)	
WLDR 138	Shielded Metal Arc Welding (SMAW)	

COMM 127 - Fundamental Communication Skills

You will use fundamental employability skills related to obtaining and keeping a job. You will apply skills to work effectively with others and produce job-related documents. You will identify employability and practical skills to prepare effective job search materials and discuss the effect of attitudes and behaviours on a successful job search.

Credit unit(s): 2.0
Prerequisites: none
Corequisites: none
Equivalent course(s): COMM 106, COMM 127A, COMM 187, COMM 191, COMM 193, JOBS 190, PROF 100, TCOM 102, TCOM 105, TCOM 120, TCOM 140

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. Apply job-related interpersonal communication strategies.			
2. Examine effective digital communication.			
3. Prepare job-related written communication.			
4. Use job search skills.			

DRFT 183 - Drafting and Blueprint Reading

You will acquire sufficient drafting and blueprint reading skills to produce acceptable shop drawings. You will be able to read all shop drawings for fabricating and maintaining industrial equipment. You will practice fabrication to complete the Arbor Press Project. Wherever possible, drafting courses will be modified to meet the specific requirements of the trade.

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. Prepare working sketches.			
2. Develop working drawings from sketches.			
3. Construct parts and assembly drawings from working drawings.			
4. Generate assembly drawing and parts lists.			
5. Prepare patterns using development techniques.			
6. Interpret welding symbols.			
7. Compose welding symbols.			
8. Develop weld fabrication drawings.			
9. Prepare material lists.			
10. Interpret engineering drawings.			

HYDR 100 - Hydraulics

You will learn the basic theory and practical application of hydraulic and electricity as it applies to hydraulics.

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. Describe hydraulic systems.			
2. Construct hydraulic systems.			
3. Maintain hydraulic systems.			
4. Repair hydraulic systems.			

INDM 101 - Belts, Chains, Shafts and Gears

You will receive an introduction to the Indigenous cultural groups within Saskatchewan. You will learn about the colonization of Indigenous peoples by the Canadian state. Your studies will help you discuss current issues and explore possible solutions.

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

Use a checkmark (P) 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 Indigenous nations of Saskatchewan.			
2. Explain how colonization has impacted Indigenous peoples.			
3. Discuss current issues and possible solutions.			

INDM 101 - Belts, Chains, Shafts and Gears

You will study the theory and application of belts, chains, shafts, and gear drives.

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. Identify shafts and components.			
2. Describe the different V-belt drives, chain drives, and gear drives.			
3. Perform v-belt drive and chain drive calculations.			
4. Select v-belt and chain drive components.			
5. Construct V-belt drives and chain drives.			
6. Perform gear drive calculations.			
7. Maintain gear drive assembly.			
8. Assemble gear drive components.			

INDM 104 - Couplings, Clutches and Brakes

You will learn the theoretical applications of couplings, clutches, and brakes.

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. Describe coupling systems.			
2. Describe clutch systems.			
3. Describe braking systems.			
4. Assemble coupling system.			

INDM 105 - Pneumatics and Compressors

You will learn the theory and application of pneumatics and compressors.

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. Describe pneumatic systems.			
2. Construct pneumatic systems.			
3. Maintain pneumatic systems, compressors, and controls.			
4. Repair pneumatic systems, compressors, and controls.			

INDM 112 - Machine Installation and Shaft Alignment

You will be introduced to machine installation and shaft alignment. You will perform alignment and leveling procedures.

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. Describe levels and leveling procedures.			
2. Describe optical levels.			
3. Identify shaft alignment procedures.			
4. Perform rim and face alignment.			
5. Perform leveling procedures.			
6. Perform basic shaft alignments.			

INDM 113 - Lubrication, Seals and Gaskets

You will learn the theory and practical application of lubrication, seals, and gaskets as they apply to power transmissions.

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. Describe types of lubrication systems and sealing devices.			
2. Select lubrication and sealing devices.			
3. Lubricate equipment.			
4. Maintain sealing devices.			
5. Install sealing devices.			
6. Manufacture sealing devices.			

INDM 114 - Rigging, Hoisting, Lifting and Safety

You will learn applicable occupational health and safety (OH&S) regulations, rigging, signaling and load estimations. You will learn safe work practices regarding ladders, scaffolds, fire containment and WHMIS.

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. Discuss occupational health and safety (OH&S) act and regulations.			
2. Describe fire safety.			
3. Discuss the safe use of ladders and scaffolds.			
4. Apply rigging and estimate load.			
5. Demonstrate signaling.			
6. Demonstrate effective site evaluation.			

INDM 115 - Bearings

You will learn the theory and application of friction bearings and anti-friction bearings. You will maintain and assemble bearing units.

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. Identify plain bearing materials.			
2. Identify plain bearing types.			
3. Maintain plain bearings.			
4. Identify anti friction bearings.			
5. Identify anti friction bearing accessories.			
6. Maintain ball bearing unit.			
7. Construct roller bearing unit.			

MATH 181 - Industrial Mechanics Certificate Trade Mathematics

You will review basic mathematics and the Imperial and Metric systems of measurement. You will be introduced to mathematical concepts that support applications in the industrial mechanics trade and your studies will focus on these various applications.

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. Use Basic Mathematics.			
2. Use the Imperial and Metric Systems of Measurement.			
3. Use Algebra.			
4. Use Basic Geometry and Trigonometry problems.			
5. Solve problems involving rigging.			
6. Solve problems related to power transmission.			
7. Solve geometric applications for machine shop work.			
8. Calculate adjustments for machine alignment and installation.			
9. Solve thermodynamics and fluid power problems.			

METL 101 - Metallurgy and Fabrication

You will learn theory and practical application of metallurgy for steels. You will learn theoretical and practical fabrication techniques.

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. Describe metallurgy of steel.			
2. Identify steel manufacturing.			
3. Construct tools from steel.			
4. Plan project.			
5. Identify fabrication techniques.			
6. Construct projects using forging and soldering techniques.			

PIPE 100 - Pumps and Pipe Fitting

You will learn the theory and practical application of all types of process pumps and pipe systems.

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. Describe pumping and piping systems.			
2. Construct pumping and piping systems.			
3. Maintain pumping and piping systems.			

PRAC 182 - Work Experience

You will participate in a work placement to further your understanding of workplace employer needs.

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 and practical skills.			

TOOL 101 - Machine Tool Operation

You will learn the basic theory and operation of a lathe.

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. Follow machine tool safety practices.			
2. Service engine lathes and milling machines.			
3. Use lathe work holding devices.			
4. Perform face and centre drill operation.			
5. Perform grooving, parting, and tapping operations.			
6. Cut external threads using a lathe.			
7. Perform machining with carbide tooling.			
8. Produce a taper using a taper attachment and compound rest.			
9. Use a manual vertical milling machine.			

TOOL 102 - Hand Cut Tools

You will learn the theoretical and practical application of hand cutting tools.

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. Describe types of hand cutting tools.			
2. Describe use of hand cutting tools.			
3. Construct projects with hand cutting tools.			
4. Maintain hand cutting tools.			

TOOL 103 - Assembly and Measuring Tools

You will experience the theoretical and practical application of assembly tools, precision measuring tools, and threading applications.

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. Identify types of hand assembly tools and precision measuring tools.			
2. Describe uses of assembly tools.			
3. Construct projects with assembly tools.			
4. Describe uses of precision measuring tools.			
5. Operate precision measuring tools.			
6. Maintain assembly and precision measuring tools.			
7. Identify hand threading tools.			
8. Describe the use of hand threading tools.			
9. Operate hand threading tools.			
10. Identify types of fasteners.			

TOOL 104 - Power Tools

You will learn theory and practical operation of grinders, drills and other power tools.

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. Identify types of power tools.			
2. Describe use of power tools.			
3. Construct project with power tools.			
4. Maintain power tools.			

WLDR 137 - Oxy Fuel, Cutting and Welding, Gas Metal Arc Welding (GMAW)

You will learn the theory and practical basic skills of Oxy fuel welding and cutting and Gas Metal Arc Welding, short circuit and spray welding.

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. Assemble oxy-fuel cutting equipment.			
2. Demonstrate oxy-acetylene cutting.			
3. Assemble oxy-acetylene welding equipment.			
4. Demonstrate oxy-acetylene welding.			
5. Assemble gas metal arc welding equipment.			
6. Demonstrate gas metal arc welding.			

WLDR 138 - Shielded Metal Arc Welding (SMAW)

You will learn the theory and practical basic welding skills of shield metal arc welding (SMAW).

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. Assemble shielded metal arc welding equipment.			
2. Demonstrate shielded metal arc welding.			
3. Assemble press project using shielded metal arc welding.			