Automotive Service Technician

PLAR Candidate Guide

Prior Learning Assessment and Recognition (PLAR)

SASKATCHEWAN POLYTECHNIC

Tomorrow in the making.

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The Automotive Service Technician 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.

Developed by program	June 2008			
Revised	September 2009			
Web ready – PLAR office	March 2010	July 2013	December 2014	

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Why consider a PLAR assessment?

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 Automotive Service Technician 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?

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 2 years successful experience in the last 5 years in an automotive service related field, and have learned the skills and knowledge for **one or more** of the Automotive Service Technician 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 Automotive Service Technician program at: 1-866-467-4278.

Which courses are PLAR-ready?

Automotive Service Technician Certificate program profile			
COURSE CODE	**COURSE NAME**	**PLAR Challenge(s) *available* through program**	**PLAR Challenge(s) *not available***
Associated Studies courses*		*see note below*	
COMM 127	Industrial Communications	✓	
MEAS 182	Applied Trade Measurement	✓	
WELD 110	Welding		X
FAID 1001	First Aid/CPR Heart Saver A AED		X
Program courses			
ATMC 120	Body and Trim	✓	
ATMC 121	Chassis Systems		X
BRAK 120	Brake Systems	✓	
DRTR 120	Drivelines and Powertrain	✓	
ELEC 124	Automotive Electronics	✓	
ELEC 125	Charging Systems	✓	
ELEC 126	Starting Systems	✓	
ELEC 127	Ignition Systems	✓	
ENGN 120	Engines	✓	
ENGN 121	Engine Repair	✓	
FUEL 120	Fuel Systems	✓	
SHOP 121	General Shop Procedures	✓	
TRNM 120	Transmission and Clutches	✓	

Note: Some courses common to multiple programs at Saskatchewan Polytechnic (i.e. computers, communications, math, and sciences) are managed by Associated Studies Faculty. To see if these shared courses in your program are PLAR-ready, visit the PLAR homepage for links to Candidate Guides for Associated Studies/Communications and for Standardized Computers.

For assistance call Saskatchewan Polytechnic and ask to speak to the PLAR advisor/counsellor assigned to the Automotive Service Technician certificate program at: 1-866-467-4278.

Is PLAR available at any time of the year?

PLAR challenges are currently being offered in May and June for the class beginning the following September.

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

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?

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?

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://gosiast.com/student-services/support/counselling-services.aspx

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

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://gosiast.com/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

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

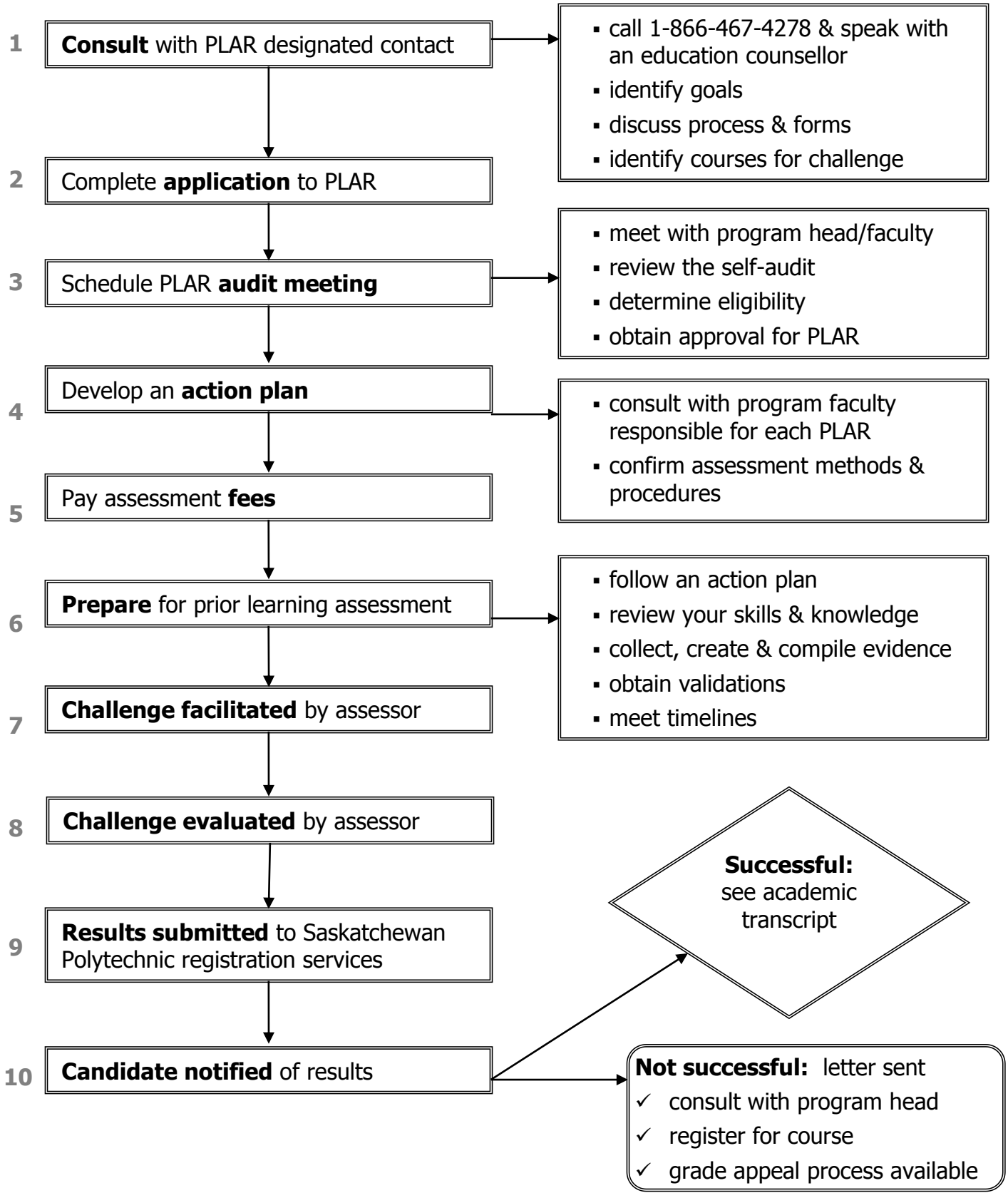
Saskatchewan Polytechnic in Moose Jaw
Counselling Services, Room 2.203
306-691-8311 or 306-691-8310
pallisercounselling@saskpolytech.ca

Saskatchewan Polytechnic in Prince Albert
Counselling Services, Room F203 (Technical Centre)
306-765-1611
woodlandcounselling@saskpolytech.ca

Saskatchewan Polytechnic in Regina
Counselling Services, Room 228
306-775-7436
wascanacounselling@saskpolytech.ca

Saskatchewan Polytechnic in Saskatoon
Counselling Services, Room 114
306-659-4050
kelseycounselling@saskpolytech.ca

Prior Learning Assessment and Recognition process



Guiding principles for developing a PLAR evidence file

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 2 years experience in the last 5 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

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 Automotive Service Technician 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
- observations
- workplace validations
- work orders fro past jobs worked on
- photos of environments/shops worked in

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?

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

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

Mastery:	I am able to demonstrate the learning outcome well enough to teach it to someone else.
Competent:	I can work independently to apply the learning outcome.
Functional:	I need some assistance in using the outcome.
Learning:	I am developing skills and knowledge for this area.
None:	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

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)

ATMC 120 – Body and Trim

You will learn how to adjust doors, lids, moveable glass and headlights. You will develop skills in diagnosing and repairing leaks and noises.

Credit unit(s): 2.0

ATMC 120 – Body and Trim **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Adjust doors, lids and movable glass.					
▪ Identify types of adjustment procedures					
▪ Adjust doors, lids and moveable glass					
2. Repair leaks and noises.					
▪ Identify type of leak/noise					
▪ Diagnose leaks and noises					
▪ Repair leaks and noises					
3. Perform headlight adjustment/replacement.					

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

2. **Challenge exam**
   Written exam must be passed before practical given

Resources

Automotive Technology: A Systems Approach (First Canadian Edition). Written by Erjavec, Restoule, Playter.

Individual modules per course, available in Saskatchewan Polytechnic bookstore.

BRAK 120 – Brake Systems

You will develop skills in diagnosing and repairing brake systems.

Credit unit(s): 8.0

BRAK 120 – Brake Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Repair wheels and tires.					
▪ Identify types of wheels and tires					
▪ Identify types of wheel and tire problems					
▪ Describe diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Identify repair procedures					
▪ Perform repair procedures					
2. Describe brake system operation.					
▪ Describe physics principles underlying brake systems					
▪ Identify types of brake systems					
▪ Identify brake system components					
• Describe component operation					
3. Perform brake line repair.					
▪ Identify types of brake lines and hoses					
▪ Describe brake line repair procedures					
▪ Perform brake line/hose repair					
4. Perform master cylinder repair.					
▪ Identify types of master cylinders					
▪ Identify master cylinder components					
▪ Describe component operation					
▪ Describe master cylinder repair/replacement procedures					
▪ Perform master cylinder repair					
5. Perform wheel cylinder/caliper repair.					
▪ Identify types of wheel cylinders/ calipers					
▪ Identify wheel cylinder/caliper components					

BRAK 120 – Brake Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
▪ Describe component operation					
▪ Describe wheel cylinder/caliper repair/replacement procedures					
▪ Perform wheel cylinder/caliper repair					
6. Identify brake valve and switch.					
▪ Identify types of brake valves and switches					
▪ Identify brake valve and switch components					
▪ Describe component operation					
▪ Describe brake valve and switch repair/replacement procedures					
▪ Perform brake valve and switch repair					
7. Flush and bleed brake system.					
▪ Identify types of brake fluids					
▪ Identify brake fluid contamination					
▪ Flush and bleed brake systems					
8. Repair brake drums.					
▪ Identify types of brake drums					
▪ Evaluate brake drum condition					
▪ Describe brake drum repair procedures					
▪ Perform brake drum repair					
9. Repair brake rotors.					
▪ Identify types of brake rotors					
▪ Evaluate rotor condition					
▪ Describe rotor repair procedures					
▪ Perform rotor repair					
10. Service wheel bearings and seals.					
▪ Identify types of wheel bearings and seals					
▪ Evaluate condition of wheel bearings and seals					
▪ Describe servicing procedures					
▪ Perform servicing of wheel bearings and seals					

BRAK 120 – Brake Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
11. Perform park brake repair.					
▪ Identify park brake system components					
▪ Evaluate condition of park brake components					
▪ Describe repair procedures					
▪ Perform park brake system repair					
12. Perform power assist brake diagnostics.					
▪ Identify types of power-assist brake systems					
▪ Identify power-assist brake system components					
▪ Describe diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic test results					
13. Replace brake shoes and pads.					
▪ Identify types of brake shoes and pads					
▪ Evaluate condition of brake shoes and pads					
▪ Replace brake shoes and pads					
▪ Adjust brake shoes and pads					
14. Diagnose brake systems.					
▪ Identify types of brake system problems					
▪ Describe diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic test results					
▪ Select repair procedure					

PLAR assessment methods

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Individual modules per course, available in Saskatchewan Polytechnic bookstore.

DRTR 120 – Drivelines and Powertrain

You will learn how to diagnose and repair drivelines and axle.

Credit unit(s): 4.0

DRTR 120 – Drivelines and Powertrain **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Perform rear axle maintenance.					
▪ Identify types of rear axles					
▪ Identify rear axle fluid types					
▪ Analyze fluid condition					
▪ Describe rear axle maintenance procedures					
▪ Perform rear axle maintenance procedures					
2. Perform transfer case maintenance procedures.					
▪ Identify types of transfer cases					
▪ Identify transfer case fluids					
▪ Analyze fluid condition					
▪ Describe transfer case maintenance procedures					
▪ Perform transfer case maintenance procedures					
3. Perform automatic transmission maintenance procedures.					
▪ Identify types of automatic transmissions					
▪ Identify automatic transmission fluids					
▪ Analyze fluid condition					
▪ Describe automatic transmission maintenance procedures					
▪ Perform automatic transmission maintenance procedures					
4. Perform manual transmission maintenance procedures.					
▪ Identify types of manual transmissions					
▪ Identify manual transmission fluids					
▪ Analyze fluid condition					
▪ Describe manual transmission maintenance procedures					
▪ Perform manual transmission maintenance procedures					
5. Perform engine maintenance procedures.					

DRTR 120 – Drivelines and Powertrain **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
▪ Identify types of engines					
▪ Identify engine fluids					
▪ Analyze fluid condition					
▪ Describe engine maintenance procedures					
▪ Perform engine maintenance procedures					
6. Repair drive shafts.					
▪ Identify types of drive shafts					
▪ Identify draft shaft components					
▪ Describe component operation					
▪ Identify types of diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic test results					
▪ Repair drive shafts					
7. Repair axles.					
▪ Identify types of axles					
▪ Identify axle components					
▪ Describe component operation					
▪ Identify types of diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic test results					
▪ Repair axles					

PLAR assessment methods

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1. **Lab demonstration and/or industry validation**

2. **Challenge exam**
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Resources

Automotive Technology: A Systems Approach (First Canadian Edition). Written by Erjavec, Restoule, Playter.

Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ELEC 124 – Automotive Electronics

You will learn how to diagnose and repair batteries, wiring circuits and electrical components.

Credit unit(s): 9.0

ELEC 124 – Automotive Electronics **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe fundamentals of electricity and magnetism.					
▪ Describe electron theories					
▪ Describe electron flow					
▪ Describe relationship of magnetism and electricity					
2. Describe conductors and insulators.					
▪ Identify types and characteristics of conductors					
▪ Identify types and characteristics of insulators					
3. Repair conductors and connectors.					
▪ Describe types of conductor repair					
▪ Describe types of connector repair					
▪ Repair conductors					
▪ Repair connectors					
4. Describe types of electrical circuits.					
▪ Identify electrical symbols					
▪ Describe series circuits					
▪ Describe parallel circuits					
▪ Describe series/parallel circuits					
5. Construct electrical circuits.					
▪ Construct series circuits					
▪ Construct parallel circuits					
▪ Construct series/parallel circuits					
6. Apply Ohm's law.					
▪ Describe Ohm's law					
▪ Perform Ohm's law calculations					

ELEC 124 – Automotive Electronics **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
7. Use electrical test equipment.					
▪ Identify types of electrical test equipment					
▪ Use voltmeter					
▪ Use ammeter					
▪ Use ohmmeter					
▪ Use testlights					
8. Diagnose batteries.					
▪ Describe types of batteries					
▪ Describe battery construction and operation					
▪ Identify safety hazards related to batteries					
▪ Describe types of test equipment					
▪ Use test equipment					
▪ Perform battery boosting and charging procedures					
9. Diagnose solid state components.					
▪ Identify types of solid state components and their functions					
▪ Select test equipment					
▪ Diagnose solid state component condition					
10. Use schematics and flowcharts.					
▪ Identify electrical symbols					
▪ Use diagnostic flowchart					
▪ Trace path of electrical flow					
11. Diagnose computer control systems.					
▪ Identify types of computer controls					
▪ Describe operation of computer controls					
▪ Describe input device operation					
▪ Describe output device operation					
▪ Identify types of test equipment					
▪ Perform diagnostic test procedures					

ELEC 124 – Automotive Electronics **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	Mastery	Competent	Functional	Learning	None
▪ Diagnose computer control system					

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

2. **Challenge exam**
   Written exam must be passed before practical given

Resources

Automotive Technology: A Systems Approach (First Canadian Edition). Written by Erjavec, Restoule, Playter.

Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ELEC 125 – Charging Systems

You will develop skills in diagnosing and repairing charging systems.

Credit unit(s): 2.0

ELEC 125 – Charging Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe charging systems.					
▪ Identify types of charging systems					
▪ Identify charging system components and their function					
▪ Describe component operation					
▪ Describe charging system operation					
2. Diagnose charging systems.					
▪ Identify types of charging system diagnostic procedures					
▪ Describe charging system diagnostic procedures					
▪ Perform charging system diagnostic procedures					
▪ Analyze diagnostic test results					
▪ Diagnose charging system					
3. Repair charging systems.					
▪ Describe charging system repair procedures					
▪ Recommend repair procedures					
▪ Perform charging system repair procedures					
4. Repair a generator.					
▪ Identify generator components and their function					
▪ Evaluate condition of generator components					
▪ Perform diagnostic procedures					
▪ Perform generator repair procedures					

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

2. **Challenge exam**
   Written exam must be passed before practical given

Resources

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Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ELEC 126 – Starting Systems

You will develop skills in diagnosing and repairing starting systems.

Credit unit(s): 2.0

ELEC 126 – Starting Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe starting systems.					
▪ Identify types of starting systems					
▪ Identify starting system components and their function					
▪ Describe component operation					
▪ Describe starting system operation					
2. Diagnose starting systems.					
▪ Identify types of starting system diagnostic procedures					
▪ Describe starting system diagnostic procedures					
▪ Perform starting system diagnostic procedures					
▪ Analyze diagnostic test results					
▪ Diagnose starting system					
3. Repair starting systems.					
▪ Describe starting system repair procedures					
▪ Recommend repair procedures					
▪ Perform starting system repair procedures					
4. Repair a starter.					
▪ Identify starter components and their function					
▪ Evaluate condition of starter components					
▪ Perform diagnostic procedures					
▪ Perform starter repair procedures					

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

2. **Challenge exam**
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Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ELEC 127 – Ignition Systems

You will develop skills in diagnosing, repairing and replacing ignition components.

Credit unit(s): 6.0

ELEC 127 – Ignition Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe distributor-type ignition systems.					
▪ Identify distributor type ignition systems					
▪ Identify components of distributor type ignition systems					
▪ Describe operation of distributor type ignition system components					
2. Describe distributorless-type ignition systems.					
▪ Identify distributorless type ignition systems					
▪ Identify components of distributorless type ignition systems					
▪ Describe operation of distributorless type ignition system components					
3. Use ignition system testing equipment.					
▪ Identify types of testing equipment					
▪ Describe testing procedures					
▪ Perform ignition system testing procedures					
4. Repair distributor-type ignition systems.					
▪ Determine type of ignition system					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic results					
▪ Repair distributor type ignition systems					
5. Repair distributorless type ignition systems.					
▪ Determine type of ignition system					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic results					
▪ Repair distributorless type ignition system					

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

2. **Challenge exam**
   Written exam must be passed before practical given

Resources

Automotive Technology: A Systems Approach (First Canadian Edition). Written by Erjavec, Restoule, Playter.

Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ENGN 120 – Engines

You will develop skills in engine disassembly, component evaluations, measurement and reassembly procedures.

Credit unit(s): 6.0

ENGN 120 – Engines **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe engine operation.					
▪ Identify engine classifications (types)					
▪ Describe major engine components and their function					
▪ Identify principles of combustion					
▪ Describe engine operation					
2. Use precision measuring tools.					
▪ Identify types of measuring tools					
▪ Describe measurement procedures					
▪ Perform measurement procedures					
3. Repair cooling system.					
▪ Identify cooling system components and their operation					
▪ Describe cooling system testing procedures					
▪ Perform cooling system testing procedures					
▪ Interpret test results					
▪ Repair cooling system					
4. Test lubrication system.					
▪ Identify lubrication system components and their operation					
▪ Describe lubrication system testing procedures					
▪ Perform lubrication system testing procedures					
▪ Interpret test results					
5. Inspect induction system.					
▪ Identify induction system components and their function					
▪ Describe induction system testing procedures					
▪ Perform induction system testing procedures					

ENGN 120 – Engines **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
▪ Interpret test results					
6. Inspect exhaust system.					
▪ Identify exhaust system components and their operation					
▪ Describe exhaust system testing procedures					
▪ Perform exhaust system testing procedures					
▪ Interpret test results					
7. Evaluate cylinder head assembly.					
▪ Remove cylinder head assembly					
▪ Disassemble cylinder head					
▪ Inspect cylinder head					
▪ Measure components					
▪ Evaluate cylinder head components					
8. Evaluate engine block assembly.					
▪ Remove engine block assembly					
▪ Disassemble engine block					
▪ Inspect engine block					
▪ Measure components					
▪ Evaluate engine block components					
9. Assemble engines.					
▪ Assemble cylinder head					
▪ Assemble block					
▪ Assemble engine					
▪ Perform start-up procedures					

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

2. **Challenge exam**
   Written exam must be passed before practical given

Resources

Automotive Technology: A Systems Approach (First Canadian Edition). Written by Erjavec, Restoule, Playter.

Individual modules per course, available in Saskatchewan Polytechnic bookstore.

ENGN 121 – Engine Repair

You will learn how to diagnose and repair automotive engines.

Credit unit(s): 6.0

ENGN 121 – Engine Repair **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Diagnose engines.					
▪ Perform system checks					
▪ Verify customer concern(s)					
▪ Perform tests to isolate problem					
▪ Identify repair procedure					
2. Remove engine.					
▪ Describe safety procedures					
▪ Describe removal techniques					
▪ Remove engine					
3. Repair cylinder head.					
▪ Evaluate cylinder head					
▪ Grind valves					
▪ Grind valve seats					
▪ Repair valve guides					
▪ Assemble cylinder head					
4. Repair block assembly.					
▪ Evaluate block assembly					
▪ Determine repair requirements					
▪ Assemble block assembly					
5. Assemble engine.					
▪ Assemble engine					
▪ Install engine					
▪ Perform start-up procedures					

PLAR assessment methods

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1. **Lab demonstration and/or industry validation**

2. **Challenge exam**
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Resources

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FUEL 120 – Fuel Systems

You will learn how to diagnose and repair fuel systems.

Credit unit(s): 6.0

FUEL 120 – Fuel Systems **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe carburetor fuel system operation.					
▪ Identify types of carburetors					
▪ Identify carburetor components					
▪ Describe theories of carburetor operation					
2. Perform carburetor adjustments.					
▪ Describe types of carburetor adjustments					
▪ Perform carburetor adjustments					
3. Describe fuel injection/emission system operation.					
▪ Identify types of fuel injection/emission systems					
▪ Describe components of fuel injection/emission systems					
▪ Describe theories of fuel injection/emission system operation					
4. Repair fuel injection/emission system.					
▪ Identify type of fuel injection/emission system					
▪ Identify types of diagnostic equipment					
▪ Explain diagnostic procedures					
▪ Perform diagnostic procedures					
▪ Interpret diagnostic test results					
▪ Repair fuel injection/emission system					
5. Maintain fuel injection/emission system.					
▪ Identify types of maintenance procedures					
▪ Perform maintenance procedures					

PLAR assessment methods

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SHOP 121 – General Shop Procedures

Your studies will focus on safe work practices and housekeeping. You will learn how to use shop/hand/power tools, measuring tools, fasteners, fittings, manuals and resources. You will also become familiar with road testing and pre-delivery procedures.

Credit unit(s): 6.0

SHOP 121 – General Shop Procedures **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe WHMIS.					
▪ Identify the purpose and components of WHMIS					
▪ Explain WMIS hazard symbols					
▪ Describe a WHMIS supplier label					
▪ Explain information on material safety data sheets					
▪ Describe employer and employee rights and responsibilities under WHMIS legislation					
2. Describe Occupational Health and Safety procedures.					
▪ Explain the purpose of OH&S legislation					
▪ Identify common workplace hazards					
▪ Identify general safety practices					
▪ Describe reporting procedures for accidents					
▪ Explain employer and employee responsibilities to ensure a safe working environment					
3. Describe the use of personal protective clothing.					
▪ Identify protective equipment to prevent eye, ear, head, hand and foot injury					
▪ Identify protective measures to be taken against heat and flames, fumes, chemical and dust exposure					
4. Describe the use of fire fighting equipment.					
▪ List the causes and properties of fire					
▪ Select fire extinguishers					
▪ Describe the procedure in extinguishing a given fire					
5. Maintain shop safety.					
▪ Identify safety signs, shields and guards					
▪ Identify safety when operating equipment					

SHOP 121 – General Shop Procedures **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
6. Perform housekeeping duties.					
▪ Identify ways of cleaning and keeping the shop area tidy					
▪ Clean the shop area					
7. Move equipment and materials manually.					
▪ Describe lifting principles					
▪ Use safe lifting procedures					
8. Use lifting equipment.					
▪ Identify types of lifting equipment					
▪ Describe safe lifting practices					
▪ Use lifting equipment					
9. Use precision measuring tools.					
▪ Describe types of precision measuring tools					
▪ Use precision measuring tools					
10. Use hand and power tools.					
▪ Identify types of hand tools					
▪ Identify types of power tools					
▪ Describe the care and use of hand tools					
▪ Describe the care and use of power tools					
▪ Use hand and power tools					
11. Select threaded fasteners and fittings.					
▪ Identify types of fasteners and fittings					
▪ Select fasteners and fittings					
12. Perform drilling operations.					
▪ Describe the safety precautions to be followed when working with twist drills					
▪ Sharpen twist drills					
▪ Maintain drilling equipment					
▪ Operate drilling equipment (handheld drills and drill presses)					

SHOP 121 – General Shop Procedures **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
13. Perform internal and external threading and repair operations.					
▪ Identify types of threading equipment					
▪ Identify types of threading procedures					
▪ Use taps and die set					
▪ Use thread repair equipment					
14. Perform a road test.					
▪ Perform walk around inspections					
▪ Check under lid fluid levels					
▪ Perform start up procedure					
▪ Perform road test					
15. Use job related information.					
▪ Complete parts requisitions					
▪ Complete service work order					
▪ Interpret technical manuals and service reports					
▪ Interpret instruction sheets/ work orders					
▪ Access electronic service information					
▪ Complete timesheets					

PLAR assessment methods

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1. **Lab demonstration and/or industry validation**

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Resources

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Individual modules per course, available in Saskatchewan Polytechnic bookstore.

TRNM 120 – Transmission and Clutches

You will develop skills related to automatic and manual transmission maintenance, removal and replacement. You will also learn how to diagnose and repair clutches.

Credit unit(s): 6.0

TRNM 120 – Transmission and Clutches **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
1. Describe clutch operation.					
▪ Identify types of clutches					
▪ Identify clutch components					
▪ Describe component operation					
▪ Describe clutch operation					
2. Remove manual transmission.					
▪ Describe safety procedures					
▪ Describe removal techniques					
▪ Remove transmission					
3. Remove clutch assembly and flywheel.					
▪ Describe removal procedure					
▪ Remove clutch assembly and flywheel					
4. Flywheel repair.					
▪ Inspect flywheel condition					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					
5. Repair clutch plate.					
▪ Inspect condition of clutch plate					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					
6. Repair pressure plate.					
▪ Inspect condition of pressure plate					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					

TRNM 120 – Transmission and Clutches **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
7. Repair release and pilot bearings.					
▪ Inspect condition of release and pilot bearings					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					
8. Repair clutch activating procedures.					
▪ Inspect condition of clutch activating devices					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					
9. Repair housing and components.					
▪ Inspect condition of housing and components					
▪ Perform diagnostic procedures					
▪ Determine necessary repairs					
10. Perform clutch maintenance procedures.					
▪ Identify types of clutches					
▪ Identify types of fluids					
▪ Analyze fluid condition					
▪ Describe clutch maintenance procedures					
▪ Perform clutch maintenance procedures					
11. Install clutch assembly and flywheel.					
▪ Describe installation procedures					
▪ Install clutch assembly and flywheel					
12. Install manual transmission/housing.					
▪ Describe installation procedures					
▪ Install transmission					
13. Diagnose clutch operation.					
▪ Identify types of clutch problems					
▪ Describe diagnostic procedures					
▪ Perform diagnostic procedures					

TRNM 120 – Transmission and Clutches **Mastery:** I am able to demonstrate it well enough to teach it to someone else. **Competent:** I can work independently to apply the outcome. **Functional:** I need some assistance in using the outcome. **Learning:** I am developing skills and knowledge for this area. **None:** I have no experience with the outcome.	**Mastery**	**Competent**	**Functional**	**Learning**	**None**
▪ Select repair procedure					
14. Remove automatic transmission.					
▪ Describe safety procedures					
▪ Describe removal techniques					
▪ Remove transmission					
▪ Describe safety procedures					
15. Install automatic transmission.					
▪ Describe installation procedures					
▪ Install transmission					

PLAR assessment methods

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