Artificial Intelligence and Data Analytics Post Graduate 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

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

1. **Review** the PLAR process and FAQs and the information in this guide.
2. **Self-rate** your learning for each course using the Course Outlines in this guide.
3. **Consult** with the PLAR contact person for PLAR approval. Be prepared to provide your resume, course self-ratings (see section F), and a partially completed PLAR application. If you are approved for PLAR, the contact person will sign your PLAR application and explain next steps.
4. Apply for admission to the program. See directions for applying.
5. **Register** for PLAR at Registration/Enrolment Services once you have signed approval on your PLAR Application Form. The PLAR fee will be added to your student account.
6. **Finalize** an assessment plan with your assigned assessor**.**
7. **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
Semester 1		
ANLT 600	Business Mathematics and Data Analytics	
CDBM 602	Data Engineering	
COMP 603	Programming for Data Science	
COMP 604	Web Analytics and Business Intelligence Tools	
TCOM 600	Business Technology Communications	Arts & Sciences
Semester 2		
CDBM 603	Enterprise Data Architecture	
COMP 605	Introduction to Artificial Intelligence	
COMP 606	Machine Learning	
COMP 607	Artificial Intelligence for Management and Ethical Issues	
PROJ 613	Capstone Project	
INDG 600	Indigenous Studies	Arts & Sciences

ANLT 600 - Business Mathematics and Data Analytics

You will learn the essential skill of estimating costs and benefits for a process change. Your studies will include the development of theoretical knowledge and practical skills in these areas: querying from existing data sources, outlining assumptions, developing cost benefits models, analyzing outcomes over multiple years, separating assumptions from the model, and developing flexible formulae. A component of your studies will include an introduction to relational databases and advanced use of spreadsheet software.

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 Business Analytics and how it is used in business.			
2. Perform time value of money calculations using a spreadsheet.			
3. Analyze the cost/benefit and calculate return on investment (ROI) using a spreadsheet.			
4. Apply common metrics (measures of central tendency and measures of dispersion) in data analysis.			
5. Perform descriptive analysis using software.			
6. Perform predictive analysis using spreadsheet software.			

CDBM 602 - Data Engineering

You will study the conversion of business questions into data mining problems. You will identify sources of an organization's data. You will use strategies to transform that data into a meaningful format for data mining which will involve you developing an understanding of data modeling and transformation.

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. Explore the cross-industry process for data mining (i.e. CRIPSP-DM) lifecycle.			
2. Explain the value of business data.			
3. Describe sources of enterprise data.			
4. Align data science questions to organizational strategy.			
5. Prepare data for modeling.			
6. Perform data transformation.			

COMP 603 - Programming for Data Science

You will study enterprise data architecture and associated technologies. Your studies will include the fundamentals of relational data models and a discussion of the problems of redundancy and fragmentation. You will study the role of non-relational data models within organizations. Your studies will include data solution approaches such as data warehouses, data marts, data lakes and decentralized data models for micro services.

Credit unit(s): 3.0
Prerequisites: CDBM 602
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 enterprise data.			
2. Describe cloud and cluster solutions.			
3. Design a relational data model.			
4. Normalize an anomalous data model.			
5. Set up a non-relational database.			
6. Describe a data warehouse and an operational data store.			
7. Describe a data mart and a data lake.			
8. Describe a decentralized data model.			
9. Design a data science solution.			

COMP 604 - Web Analytics and Business Intelligence Tools

You will study the importance of business intelligence to the modern enterprise. You will study methods to report information effectively based on audience characteristics by leveraging modern business intelligence (BI) tools.

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. Analyze website data.			
2. Examine data mining through social media tracking.			
3. Explain key concepts in data analysis and business intelligence (BI).			
4. Describe the characteristics of effective reporting.			
5. Leverage PowerBI, a business analytics service, to create BI dashboards using various data sources.			
6. Make business decisions using BI tools and data.			

TCOM 600 - Business Technology Communications

You will learn how to manage communication in a business environment using best practices and common software tools. You will learn how to produce effective content delivered with appropriate 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. Write effective communication from template documents.			
2. Create long form documents using word processing software.			
3. Produce a workflow diagram in Visio.			
4. Create effective reports and dashboards with Excel.			
5. Integrate communication tools into an effective presentation.			
6. Prepare a Request for Proposal document using a standard process.			

CDBM 603 - Enterprise Data Architecture

You will study enterprise data architecture and associated technologies. Your studies will include the fundamentals of relational data models and a discussion of the problems of redundancy and fragmentation. You will study the role of non-relational data models within organizations. Your studies will include data solution approaches such as data warehouses, data marts, data lakes and decentralized data models for micro services.

Credit unit(s): 3.0
Prerequisites: CDBM 602
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 enterprise data.			
2. Describe cloud and cluster solutions.			
3. Design a relational data model.			
4. Normalize an anomalous data model.			
5. Set up a non-relational database.			
6. Describe a data warehouse and an operational data store.			
7. Describe a data mart and a data lake.			
8. Describe a decentralized data model.			
9. Design a data science solution.			

COMP 605 - Introduction to Artificial Intelligence

You will study the application of artificial intelligence (AI) application programming interfaces (APIs) to business applications. You will use AI technology to augment and automate business processes. You will implement common AI applications including image recognition, sentiment analysis, and product recommendations.

Credit unit(s): 3.0
Prerequisites: COMP 603
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 artificial intelligence (AI) and business strategy.			
2. Implement cognitive services to support decision making.			
3. Implement bot services to create a digital assistant.			
4. Implement an image tagging application using a vision application programming interface (API).			
5. Implement text to speech and back again using a speech API.			
6. Implement a sentiment analysis application using a language API.			
7. Implement a recommendation engine using a recommendation API.			

COMP 606 - Machine Learning

You will study the application of algorithms and make predictions which form the foundation of machine learning. Your studies will include these ideas in machine learning: building and evaluating predictive models, tuning these models for optimal performance, and preprocessing data for better results.

Credit unit(s): 3.0
Prerequisites: COMP 603
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 classification problems.			
2. Solve classification problems using supervised learning techniques.			
3. Describe fundamental concepts of regression.			
4. Solve problems that have continuous solutions.			
5. Tune machine learning models to evaluate and improve performance.			
6. Perform preprocessing on machine learning data to improve model performance.			
7. Perform pipelining on machine learning operations to automate machine learning models.			

COMP 607 - Artificial Intelligence for Management and Ethical Issues

You will learn the ethical issues of artificial intelligence as well as the role of professionalism and the ethical organization for the responsible execution of AI applications. You will also learn the fundamentals of operations management, managing AI decision making, and strategic planning as it pertains to AI technology.

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 IT and AI ethics in society			
2. Discuss professionalism.			
3. Describe the ethical organization.			
4. Describe operations management with an AI/ML focus.			
5. Identify AI decision making strategies.			
6. Demonstrate strategic management with an AI/ML focus.			

PROJ 613 - Capstone Project

You will learn how to work in a group to plan and execute a major Artificial intelligence and Data analytics project. You will manage and monitor the project and produce documentation to communicate effectively with your stakeholders.

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. Propose a project methodology.			
2. Research the technical and design aspects required to complete the project.			
3. Manage scheduling to ensure timely completion of the project.			
4. Monitor the progress of a project.			
5. Manage the quality of the project process.			
6. Manage the quality of project deliverables.			
7. Present the outcome of the project to stakeholders.			
8. Close a project.			

INDG 600 – Indigenous Studies

You will complete the Blanket Exercise to honour the Indigenous peoples in Canada. You will study the history of the relationships between European settlers and the Indigenous peoples from initial contact to present day. You will analyze the 94 Calls to Action of the Truth and Reconciliation Commission to redress the legacy of residential schools and advance Canadian reconciliation.

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

Use a checkmark (✓) to rate yourself as follows for each learning outcome **Competent:** I can apply this outcome without direction or supervision. **Learning:** I am still learning skills and knowledge to apply this outcome. **None:** I have no knowledge or experience related to this outcome.	**Competent**	**Learning**	**None**
1. Complete the Blanket Exercise to honour Indigenous peoples in Canada.			
2. Examine the history of relationships between European Settlers and Indigenous peoples.			
3. Analyze the Truth and Reconciliation Commission of Canada and the 94 Calls to Action.			