NORTHWESTERN POLYTECHNIC

Animal Science Department

COURSE OUTLINE – Fall 2025

AG2100 – Introduction to Advances in Grain Farming –

6 (10-0-15) 125 hours for 5 weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR:	Josefine Bartlett	**PHONE:**	780-835-6618
OFFICE:	FM6 106	**E-MAIL:**	jbartlett@nwpolytech.ca
OFFICE HOURS:	By appointment only		

CALENDAR DESCRIPTION: This course offers an insightful entry point into the world of modern grain farming techniques, technologies, and innovations. As the agricultural industry rapidly evolves, this course serves as a foundational exploration of the latest advancements that are reshaping grain farming practices to meet the demands of a changing world. Throughout this course, participants will be introduced to a diverse range of topics that cover the essential aspects of contemporary grain farming, from pre-planting strategies to post-harvest management. By delving into the integration of cutting-edge approaches and technologies, participants will gain a solid understanding of how these innovations contribute to enhanced yields, sustainability, and overall profitability.

PREREQUISITE(S)/COREQUISITE: N/A

REQUIRED TEXT/RESOURCE MATERIALS: TBA

DELIVERY MODE(S): On-campus (face-to-face) – This type of course will be delivered on campus in a specific location which will be indicated on the student timetable. Students are expected to fully attend in person.

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LEARNING OUTCOMES:

1. Explore the fundamentals of precision agriculture and its role in optimizing field management through data-driven insights, satellite imagery, and GPS technology.
2. Describe the basics of seed genetics, breeding techniques, and biotechnology advancements, and how they influence crop traits, disease resistance, and yield potential.
3. Describe strategies for adapting grain farming practices to changing climate conditions, including crop selection, water management, and resilient farming methods.
4. Gain exposure to the world of digital farming tools, such as agricultural apps, farm management software, and IoT devices, and understand their role in improving efficiency and decision-making.
5. Develop a foundational understanding of integrated pest management, including an overview of sustainable approaches to pest and disease control.
6. Describe soil health basics, soil testing, and introductory soil management practices that contribute to long-term fertility and productivity.
7. Explore the initial concepts of grain storage, preservation, and transportation to ensure quality and minimize post-harvest losses.
8. Understand the fundamental principles of sustainable grain farming, including conservation practices, cover cropping, and responsible resource management.
9. Understand the economic factors influencing grain farming decisions, including basic cost considerations and market awareness.
10. Engage with practical case studies and hear from guest speakers who share their experiences and insights into applying advanced techniques in real-world grain farming scenarios.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.alberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

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EVALUATIONS:

GRADING CRITERIA

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Grading Chart for courses with Alpha Grading:

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	67-69
A	4.0	85-94		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE: This course will run over four weeks and has been adjusted from the originally scheduled five weeks to accommodate Class 1 driver training. Each day will include 3.75 hours of lab time and 2.5 hours of lecture time, for a total of 125 hours.

STUDENT RESPONSIBILITIES:

Enrolment at NWP assumes that the student will become a responsible citizen of the Polytechnic Institute. As such, each student will display a positive work ethic, take pride in and assist in the maintenance and preservation of Institute property, and assume responsibility for his/her education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting instructor expectations concerning attendance, assignments, deadlines, and appointments.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at https://www.nwpolytech.ca/about/administration/policies/index.html.

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**Note: all Academic and Administrative policies are available on the same page.