

DEPARTMENT OF ANIMAL SCIENCE
VETERINARY TECHNOLOGY
COURSE OUTLINE – Winter 2026

AH 601 Introduction to Artificial Insemination Large Animal– 1 (1-0-1.5) 36 Hours for 16 Weeks

Northwestern Polytechnic (NWP) 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:	Christy Barlund, DVM	PHONE:	(780) 835-6701 office
OFFICE:	FAS 136	E-MAIL:	cbarlund@nwpolytech.ca

OFFICE HOURS: by appointment Monday – Friday; noon – 1pm or as posted

CALENDAR DESCRIPTION:

This course will discuss and practice techniques of artificial insemination in large animals using cattle as the species of predominant interest. Basic anatomy and procedures will be covered. Intended for private use.

PREREQUISITE(S)/COREQUISITE:

Must be registered in the NWP Veterinary Technology Diploma Program.

Participants must be accustomed to cattle handling

REQUIRED TEXT/RESOURCE MATERIALS:

- Handouts provided on myClass
- The *Alberta Breeders Service A.I. Management Manual* (hardcopy or digital)
- Registrants are expected to bring their own protective clothing (coveralls, rubber boots).

DELIVERY MODE(S):

Lab & Lecture

LEARNING OUTCOMES:

Learn about cow reproductive tracts, the estrous cycle

- For successful completion of the course, a student should be able to identify and describe the normal anatomy and explain the physiology of the reproductive tract of the cow including the hormonal changes, ovarian changes and uterine changes that occur at each stage.

Heat Detection, Heat Detection Aides, Synchronization

- For successful completion of the course, a student should be able to identify and explain breeding behaviour of cattle.
- For successful completion of the course, a student should be able to explain the manipulation of the estrous cycles of cattle in order to improve reproductive performance.
- For successful completion of the course, a student should be able to explain and demonstrate AI technique as a means to increase fertility.
- For successful completion of the course, a student should be able to explain basic genetic improvement of livestock sire and dam selection.
- For successful completion of the course, a student should be able to explain basic disease control mechanisms.

Nutrition and its effect on Reproduction

- For successful completion of the course, a student should be able to explain body condition scoring and its relevant use in breeding programs.
- For successful completion of the course, a student should be able to explain the roles of key macronutrients and micronutrients in supporting reproductive health

Introduction to Semen Tank

- For successful completion of the course, a student explain the principles of cryopreservation, identify the components of a liquid nitrogen tank, and describe the risks and safety hazards associated with liquid nitrogen.
- Understand temperature dynamics inside the tank and the importance of maintaining adequate nitrogen levels, without compromising reproductive integrity.
- Perform correct handling procedures for moving, opening, and accessing LN₂ tanks.
- Load and retrieve semen straws while keeping exposure time and warming to a minimum to promote best reproductive performance.

Discuss options to decrease breeding expense and factors that affect AI success

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.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**

EVALUATIONS:

	Mark Distribution
A. PARTICIPATION	40%
B. INSTRUCTOR EVALUATION OF A. I. TECHNIQUE	30%
C. FINAL EXAM	30%
	100%

GRADING CRITERIA:

Alpha Grade	4-Point Equivalence	Percentage Conversion (unless otherwise specified in the Course Outline)	Descriptor
CR	N/A	60-100	Credit
NC	N/A	0-59	No Credit
GRADING CRITERIA: Credit (CR)/No Credit (NC)			
A minimum of 60% must be achieved on the final exam for successful completion of the course.			

COURSE SCHEDULE/TENTATIVE TIMELINE:

See course objectives for tentative timeline.

Course schedules based on VT class schedule (see separate schedule).

- Lecture:
 - January 5th – March 6th Tuesdays 1pm FAS145
 - March 10th – April 1st TBA
 - April 1st - April 25th TBA
- Laboratory: TBA - 3:30pm until lab clean up complete FAS 144
- may have some additional time concurrent with AG003 in FAS 151 and FAS 144
- FINAL EXAM (online) as posted with VT exam schedule (date TBA)

Enrolment at NWP assumes that the student will become a responsible citizen of the 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 their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting instructor expectations concerning attendance, assignments, deadlines, and appointments.

Veterinary Technology Program Attendance & Conduct Summary

- **Zero Tolerance for Impairment:** Attending labs, exams/quizzes, lectures, or guest speaker events under the influence of alcohol or impairing substances (including certain medications) is strictly prohibited. Violations result in unexcused absences and a mark of zero.
- **Mandatory Attendance:** Attendance is required for all exams, guest speakers and labs. Arriving late to labs, lectures, quizzes/exams will be considered an unexcused absence. Unexcused absences (at the instructor's discretion) result in:
 - **5% deduction** from the final course grade (labs/guest speakers)
- **Absence Approval:** Absences must be approved in advance or as soon as possible afterward with valid written documentation (e.g., doctor's note). Employment conflicts are not considered valid excuses.
- **Make-Up Policy:** Labs, lectures, and guest speakers cannot be made up. Missed assessments due to unexcused absences receive a grade of zero. Excused absences do not exempt students from required work or deadlines.
- **Exam Conduct:** No electronic devices (phones, smartwatches, headphones, tablets etc) are permitted during exams or evaluations. Having one present will result in immediate dismissal and a grade of 0%.
- **Further Guidelines:**
 - Spelling errors in exams/quizzes, assignments and medical records will result in a 0.5% deduction for each occurrence.
 - All handwritten materials that are submitted to the instructor must be using blue or black pen, no white out and using appropriate medical corrections.

INFORMATION TECHNOLOGY

NWP servers may be monitored. Student accounts are visible via ABTutor and student activity on NWP networks may be monitored during supervised exams and/or anytime students are on NWP networks. The collection of and access to the personal information listed above as permitted by the *Freedom of Information and Protection of Privacy Act*.

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/polytechnic-leadership/policies-directory>

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