



## Course Outline

### Instruction Team

• **Derek Inglis**  
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• **Uduak Edet**  
Room A204 AEB  
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### Student Hours

- We will be present during lectures/labs.
- Individual assistance is always available by appointment.

### Teaching Assistant

• **Mehran Azizpour**  
[azizpoum@myumanitoba.ca](mailto:azizpoum@myumanitoba.ca)

### Class Location

- **Lecture: Animal Science 219**  
MWF 11:30 AM – 12:20 PM
- **Lab: Animal Science 219**  
Wed. 2:30 - 3:20 PM

### Contact Hours

- 4 credit hours
- Lectures:  
3 hours x 12 weeks = 36 hours
- Labs:  
1 hour x 12 weeks = 12 hours

### Prerequisites:

- None.

### Course Website:

<http://umanitoba.ca/umlearn>

## Traditional Territories Acknowledgement

The University of Manitoba campuses are located on the original lands of the Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

Updated: December 15, 2025

## BIOE 0600 Farm Machinery

Winter 2026

### Course Description

This course will cover the principles of operation of basic farm machinery commonly used in modern agriculture with emphasis on tillage, seeding, spraying, and harvesting machines, including their functions, selection, adjustment, efficiency, safety, maintenance, economic, legal responsibilities, and rights.

### Course Objectives

The intent of this course is:

1. To introduce students to the operating principles and design of farm machinery.
2. To explore issues with proper calibration and operation of equipment to maximize productivity and cost efficiency.
3. To provide students with the knowledge to maintain and perform basic repairs of farm equipment.
4. To provide students with issues surrounding equipment and operator safety including legal responsibilities and rights.

### General Course Topics

Lecture topics will include machinery classification, tractor components including control, and instrumentation, tires and soil compaction, tillage equipment choices and characteristics, principles of hitching, transmission of power, hydraulics including basic principles, seeding equipment, sprayers including components, calibration, sprayer pumps and nozzles, harvesting equipment (swathers, conventional and rotary combines, principles of combine adjustment and operation), machinery inspection and maintenance tips, machinery costs, farm safety, legislation, emerging trend and sustainable agriculture.

### Intended Learning Outcomes

At the conclusion of the course, the student should be able to:

- Understand the specific functions and applications of various machines on the farm.
- Implement best practices for optimizing machinery performance to increase efficiency and reduce resource consumption.
- Evaluate the economic and environmental impact of using different types of farm machinery and assess their cost-effectiveness.
- Demonstrate knowledge of safety protocols when operating farm machinery
- Understand and adhere to local, state, and federal regulations related to farm machinery and equipment operation.

### Textbook

**Required textbook** – None.

**Supplementary readings** – A set of course notes has been prepared and will be posted on the UM Learn portal for this course. Students are responsible for the content covered in these course notes for the final examination.

### Contingency Teaching Plan

The Department of Biosystems Engineering has devised a plan so that there is minimal impact on the delivery and content of the course, should the instructor fall sick and is unable to continue lectures in person. Please be assured that the alternative plan outlining any deviation from the normal mode of instruction will be communicated to you as quickly as possible if/when the need arises.

## Important Dates

- **Experiential Learning**  
Jan 22, 26 to 27, 2027 (tentative)  
No classes or examinations
- **Last Day to Drop without Penalty**  
January 16, 2026
- **Louis Riel Day**  
Feb 16, 2024  
No classes or examinations
- **Winter Term Break**  
Feb 16–20, 2026  
No classes or examinations
- **Midterm Examination**  
TBD
- **Voluntary Withdrawal Deadline**  
March 13, 2026
- **Last Day of Classes**  
April 2, 2026
- **Good Friday**  
April 3, 2026

## Grading Scale

Letter Grade	Percentage out of 100
A+	92-100
A	85-91
B+	78-84
B	72-77
C+	66-71
C	60-65
D	50-59
F	Less than 50

## Assignment Feedback

Students can expect to receive graded assignments within two weeks after the set deadline, but this may be longer for late submissions.

## Late Submission Policy

Assignments submitted after the due date will be docked 10% per day late.

## Missed Assignments

Will receive a zero grade.

## Evaluation

The basis of evaluation is established by agreement at the beginning of each term. Weights assigned to various components of work are:

Description	Allocation
In class activities	10%
Midterm Examination	15%
Labs and Assignments	40%
Group Project	10%
Final Examination	25%

## Group Work Policies

Students are allowed to discuss laboratory results with lab partners or others, but the final report must be independently written. Copying (or joint production of reports without the instructors' permission) will result in both reports receiving a zero mark.

## Missed Exams

There is NO make-up examination for a missed mid-term! If missed and the student has a valid medical certificate or compassionate reason (e.g., death of an immediate family member), marks from mid-term will be added to marks for the final examination. Students who miss the examination without a valid reason will receive a grade of zero (0) for the mid-term examination. In the case of a missed final examination, a student will be assigned an "F" and no paper grade for the course unless an acceptable medical certificate or a confirmable compassionate reason is provided, in which case a supplementary examination will be allowed.

## Academic Integrity

In accordance with the *General Academic Regulations on Academic Integrity*, students are reminded that plagiarism or any other form of cheating in examinations, term tests, assignments, projects, or laboratory reports is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university). This includes the unauthorized use of AI when preparing course deliverables. A student found guilty of contributing to cheating by another student is also subject to a serious academic penalty. Integrity also applies to respecting copyrighted course content, which should not be distributed without the creator's permission. Uploading content for the purpose of transcription or other AI-enabled features is commonly a violation of the copyright holder's rights.

## Requirements/Regulations

- No programmable devices or systems (such as calculators, PDAs, iPods, iPads, cell phones, smart watches, wireless communication, or data storage devices) are allowed in examinations unless the course instructor approves.
- Please copy the Instruction Team in all emails (Instructors and Teaching Assistants). All email communication must conform to the Communicating with Students university policy. [Communicating with Students](#)
- Attending lectures and laboratories is essential for the successful completion of this course.
- Self-declaration forms may be completed for missed tests, exams, or assignments during short-term absences ( $\leq 72$  hours) for extenuating circumstances. Students don't need to share personal information about their situation beyond declaring the nature of the extenuating circumstance on the self-declaration form. [Self-Declaration Form for Brief or Temporary Absence](#)
- This form cannot be used for planned absences like vacations. It is also not to be used for longer-term absences, or ongoing circumstances (e.g., Authorized Withdrawals, Leaves of Absence, or other accommodations), which will still require additional documentation. [Self-Declaration Policy for Brief or Temporary Absences](#)

- It is the responsibility of each student to contact the instructor in a timely manner if he or she is uncertain about his or her standing in the course and about his or her potential for receiving a failing grade. Students should familiarize themselves with the University's *General Academic Regulations*.

[General Academic Regulations](#)

- Students should be aware that they have access to an extensive range of resources and support organizations. These include Academic Resources, Counselling, Advocacy, and Accessibility Offices as well as documentation of key University policies e.g. Academic Integrity, Respectful Behaviour, Examinations, and related matters.

[Supplemental Resources](#)

## Deferred Final Examinations

Students who miss the regularly scheduled writing of a final examination for valid medical or compassionate reasons will only be allowed to write a deferred exam if the Faculty of Agriculture Academic Advising Office approves the request. All requests for a deferred examination *must* be made within 48 hours of the missed exam and follow the procedure described on the Faculty [website](#) without exception. **Course Instructors do not have the discretion to grant deferred final examinations.**

[Deferred Exam Policy \(student experience website\)](#)

## Retention of Student Work

Students are advised that copies of their work submitted in completing course requirements (i.e. assignments, laboratory reports, project reports, test papers, examination papers, etc.) may be retained by the instructor and/or the department for the purpose of student assessment and grading. This material shall be handled in accordance with the University's *Intellectual Property Policy* and the protection of privacy provisions of *The Freedom of Information and Protection of Privacy Act (Manitoba)*. Students who do not wish to have their work retained must inform the Head of Department, in writing, at their earliest opportunity.

## Copyright Notice

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[Copyright Office](#)