



Course Outline

Instruction Team

- Dr. Uduak Edet.
A204 Agricultural Engineering
Building
(204) 474-7446
Uduak.Edet@umanitoba.ca

Student Hours

- Individual assistance is available by appointment.

Teaching Assistant

- Sky Liu

Class Location

- **Lecture: E2-304 EITC**
MWF 1:30 – 2:20 PM
- **Lab: E2-105 EITC**
Mon. 2:30 - 3:20 PM

Contact Hours

- 4 credit hours
- Lectures:
3 hours x 12 weeks = 36 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.

BIOE 0600 Farm Machinery

Fall 2022

Course Description

To teach Diploma Agriculture students the principles of operation of basic farm implements with emphasis on seeding, tillage, haying and harvest machines including their selection, adjustment, efficiency, safety, and cost of operation with respect to test data.

Course Objectives

The intent of this course is:

1. To introduce students to the operating principles and design of agricultural equipment.
2. To explore issues with proper calibration and operation of equipment to maximize productivity and cost efficiency.
3. To provide students with issues surrounding equipment and operator safety including legal responsibilities and rights.

General Course Topics

Lecture topics will include Tillage equipment choices and characteristics, Principles of Hitching, Transmission of Power, Hydraulics including basic principles, components (pumps and valves) and different systems (open and closed center, load sensing), seeding equipment and haying equipment, sprayers including components, calibration, sprayer pumps and nozzles, harvesting equipment (swathers, conventional and rotary combines, principles of combine adjustment and operation), machinery costs, and farm safety.

Intended Learning Outcomes

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

- Evaluate alternatives for agricultural equipment.
- Explain principles relating to calibration and optimal operation of equipment.
- Apply principles of safety engineering and human factors engineering to the management and operation of agricultural equipment.

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

- **Early Withdrawal Deadline**
September 26, 2022
- **National Day for Truth and Reconciliation**
September 30, 2022
No classes or examinations
- **Thanksgiving**
October 10, 2022
No classes or examinations
- **Experiential Learning**
October 11 - 14, 2022 (tentative)
No classes or examinations
- **Midterm Examination**
October 24, 2022 (tentative)
- **Fall Term Break**
November 7-10, 2022
No classes or examinations
- **Remembrance Day**
November 11, 2022
No classes or examinations
- **Voluntary Withdrawal Deadline**
November 21, 2022
- **Last Day of Classes**
December 9, 2022

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 of their submission.

Late Submission Policy

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

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 Exam	20%
Lab Assignments	30%
Final Examination	40%

Missed Exams

There is NO make-up examination for a missed mid-term! If missed and 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 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). A student found guilty of contributing to cheating by another student is also subject to serious academic penalty.

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 approved by the course instructor.
- 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 (≤ 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](#)

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.

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 Copyright Office