Syllabus

Advanced Cropping Systems: PLNT 4510

Winter 2023
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## COURSE DETAILS

<table>
<thead>
<tr>
<th><strong>Course Title &amp; Number:</strong></th>
<th>Advanced Cropping Systems: PLNT 4510</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Credit Hours:</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Class Times &amp; Days of Week:</strong></td>
<td>Tuesday and Thursday 1-2:20</td>
</tr>
<tr>
<td><strong>Location for class:</strong></td>
<td>134 Agriculture</td>
</tr>
<tr>
<td><strong>Pre-Requisites:</strong></td>
<td>PLNT 2500</td>
</tr>
</tbody>
</table>

### Instructor Contact Information

<table>
<thead>
<tr>
<th><strong>Instructor(s) Name &amp; Preferred Form of Address:</strong></th>
<th>Dr. Yvonne Lawley, Assistant Professor, Department of Plant Science. Students are welcome to address me by name as either Yvonne or Dr. Lawley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office Location:</strong></td>
<td>109 Plant Science</td>
</tr>
<tr>
<td><strong>Office Hours or Availability:</strong></td>
<td>Email Dr. Lawley to setup an appointment. On most days, Dr. Lawley is available for a half hour after class for appointments with students. If you have a schedule conflict after class or need help on a different day, contact Dr. Lawley by email to set up an appointment at a mutually agreeable time.</td>
</tr>
<tr>
<td><strong>Office Phone No.</strong></td>
<td>204-474-6504</td>
</tr>
<tr>
<td><strong>Email:</strong></td>
<td><a href="mailto:Yvonne.Lawley@umanitoba.ca">Yvonne.Lawley@umanitoba.ca</a></td>
</tr>
</tbody>
</table>

**Note:** All email communication must be from your university email account and conform to the Communicating with Students university policy.

| **Contact:** | Email is the most reliable way to contact Dr. Lawley. You can also ask her questions at the end of class. If you have several questions or questions that require more explanation to answer, I encourage you to sign up for an in person or virtual meeting by email. |
Course Description

U of M Course Calendar Description
Examination and analysis of sustainable Prairie cropping systems. Emphasis will be placed on systems that optimize the benefits of crop rotation, integrate crops and livestock, conserve soil and water resources, and enhance biodiversity. Current, historical, and emerging crop production systems from the Prairies and other regions of the world will be discussed. Includes experiential learning through farm interviews and/or field tours and/or guest speakers. May not be held with PLNT 3510. Prerequisite: PLNT 2500 (D).

General Course Description
This course is the capstone course for the agronomy program. It teaches you to think about agriculture from a systems perspective. It integrates information learned throughout your degree and focuses on learning how to use this knowledge to solve agronomic problems. This course will give you a broader understanding of the evolution of prairie cropping systems from the past to the present and looking towards the future.

This is a “big picture” course that focuses on synthesizing information. You will be learning content and skills in a different way than many of your previous courses. In previous agronomy classes you likely focused on content:
- The steps to growing a successful wheat crop,
- The physical, chemical, and biological methods of weed control,
- Disease cycles and how to control pests by breaking the weakest link,
- The form and rate of fertilizer applications to optimize canola yield,
- Soil management practices to minimize soil erosion

This class focuses on learning how to link this information together to identify and evaluate the pieces as part of a larger cropping system. You will be using the knowledge gathered throughout your degree program and your observation skills to learn about the world around you. You will practice making informed decisions about agronomic problems. You will be asked to question the current assumptions we make about agriculture and consider how it is likely to change in the future. You will be evaluated on your ability to describe and define agricultural systems, contrast similarities and differences, synthesize information, make observations, and problem solve.

Course Goals
The goal of this course is to understand crop production within a systems context, learn about the diversity of prairie cropping systems, and to practice applying acquired knowledge and observation skills to solve agronomic problems both large and small.
Course Learning Objectives

1. Define and describe the components of cropping systems.
2. Apply systems thinking to identify and solve an agronomic problem.
3. Discuss the potential consequences of changes to cropping system components to the overall function of a system.
4. Apply knowledge and use observation skills to identify and solve agronomic problems.
5. Describe current and historical cropping systems of the Canadian Prairies.
6. Gain awareness of the diversity of cropping systems in the Canadian Prairies.
7. Explain the technological and biological breakthroughs that have contributed to the productivity and problems of current cropping systems.
8. Identify the limitations and challenges of current cropping systems.
9. Describe emerging agronomic technologies and cropping systems in the Canadian Prairies.
10. Define sustainable agriculture and the metrics used to compare the sustainability of cropping systems.

Textbook, Readings, and Course Materials

Required textbook: There is no textbook for this course. Required readings for this course will be posted on UMLearn. https://universityofmanitoba.desire2learn.com/d2l/home

Supplementary readings: If you are struggling with a particular course subject, contact the professor for specific suggestions of supplemental material.

Required materials: This is a blended course. You will require a computer with speakers, a webcam, microphone, and high speed internet connection to access UM Learn and WebEx.

Using Copyrighted Material

Please respect copyright. We will use copyrighted content in this course. I have ensured that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and university guidelines. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the Copyright Act applies or written permission has been confirmed. For more information, see the University’s Copyright Office website at http://umanitoba.ca/copyright/ or contact um_copyright@umanitoba.ca.

Course Technology

This course will utilize UM Learn for access to course materials and assigned readings, submission of assignments, feedback on assignments, group assignment, and posting assignment grades.

Students are welcome to utilize electronic devices such as computers or tablets during class in a responsible, efficient, ethical and legal manner as long as their use is focused on class and is not disruptive to other students.
Policies

**Group Work:** Team and group work skills are qualities that most employers are looking for in job candidates. Treat the group work term project and group discussion in this course as an opportunity to develop and document these skills for use in future job application and interviews. All group members should exchange contact information (email, phone) at the start of a project so that you can get in contact with each other outside of class. If a problem cannot be resolved within the group, please contact the professor sooner rather than later (i.e., not the day before the project is due) to help facilitate a solution. Please be aware of the policy on Inappropriate Collaboration described under the Academic Integrity section of the syllabus.

**Class Communication:**
You are required to obtain and use your University of Manitoba email account for all communication between yourself and the university. All communication must comply with the Electronic Communication with Student Policy: [http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html](http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html).

**Academic Integrity:**
Each student in this course is expected to abide by the University of Manitoba Academic Integrity principles. Always remember to reference the work of others that you have used. Also be advised that you are required to complete your assignments independently unless otherwise specified. If you are encouraged to work in a team, ensure that your project complies with the academic integrity regulations. You must do your own work during exams. Inappropriate collaborative behavior and violation of other Academic Integrity principles, will lead to the serious disciplinary action. Visit the Academic Calendar, Student Advocacy, and Academic Integrity web pages for more information and support.

Refer to specific course requirements for academic integrity for individual and group work such as:

I. Group projects are subject to the rules of academic dishonesty;
II. Group members must ensure that a group project adheres to the principles of academic integrity;
III. Students should also be made aware of any specific instructions concerning study groups and individual assignments;
IV. The limits of collaboration on assignments should be defined as explicitly as possible; and
V. All work should be completed independently unless otherwise specified.

For more information on academic integrity, review the University of Manitoba Academic Integrity website and complete the academic integrity tutorial [Academic Integrity | University of Manitoba (umanitoba.ca)](http://umanitoba.ca).

**Recording Class Lectures:**
Dr. Yvonne Lawley and invited lecturers hold copyright over the course material, presentations, and lectures that make up this course. Students are permitted to take pictures of lecture slides for personal study only. No audio or video recording of lectures or presentations is allowed in whole or in part without prior permission of Dr. Lawley or invited lecturers. If you are interested in recording please contact Dr. Lawley by email to request permission and introduce yourself in person before lecture the day you wish to record. Without this permission, no audio or video recording of this material, lectures, or presentations is allowed in any format, openly or surreptitiously, in whole or in part. Course materials (both paper and digital) must not be posted on internet site and are for the participant’s private study and research, and
must not be shared. Violation of these and other Academic Integrity principles, will lead to serious
disciplinary action.

Student Accessibility Services:
The University of Manitoba is committed to providing an accessible academic community. Please contact
Dr. Lawley by email to set up a meeting time if you have accessibility questions or concerns within the
course. Students Accessibility Services (SAS) offers academic accommodation supports and services such
as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or
think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are
invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services
520 University Centre
Phone: (204) 474-7423
Email: Student_accessibility@umanitoba.ca

CLASS SCHEDULE AND COURSE EVALUATION
This schedule is subject to change at the discretion of the instructor and/or based on the learning needs
of the students but such changes are subject to Section 2.8 of ROASS.
The schedule should include dates and times of classes, including missed classes due to holidays or other
commitments of the instructor. It also includes dates of assignments/quizzes/exams and alternate forms
of assessments, date for voluntary withdrawal, and dates when students can expect to receive their
assignment or test grades.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Topics</th>
<th>Dates</th>
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</thead>
</table>
| 1    | Introduction to course and systems thinking
       Definition, system goals, system diagrams, | Jan 10 - 12 |
| 2    | History of Prairie Cropping Systems:
       Fallow-wheat, green revolution, no-till | Jan 17 – Feb 2 |
| 3    | Cropping Systems Tool Box:
       Crop-livestock integration, biofuels, soil health, cover crops,
       precision agriculture, Intercropping, Controlled Traffic
       Farming | Feb 7 - March 2 |
|      | Mid-Term Exam | Feb 16 in class |
| 4    | Current Cropping Systems in Manitoba
       Term Project Presentations | March 7 - 16 |
| 5    | Case Studies | March 21 – March 30 |
| 6    | Course Wrap Up
       Paradigms, sustainability metrics, course evaluation | April 4-11 |
|      | Final Exam | Date set by registrat’s office
                                                        April 13-25, 2023 |
Grading

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage out of 100</th>
<th>Grade Point Range</th>
<th>Final Grade Point</th>
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<tbody>
<tr>
<td>A+</td>
<td>95-100</td>
<td>4.25-4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>A</td>
<td>86-94</td>
<td>3.75-4.24</td>
<td>4.0</td>
</tr>
<tr>
<td>B+</td>
<td>80-85</td>
<td>3.25-3.74</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>72-79</td>
<td>2.75-3.24</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>65-71</td>
<td>2.25-2.74</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>60-64</td>
<td>2.0-2.24</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>50-59</td>
<td>Less than 2.0</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>Less than 50</td>
<td></td>
<td>0</td>
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Voluntary Withdrawal
The last day for voluntary withdraw from this course is March 22, 2023. Students who do not drop the course by the deadline will be assigned a final grade. Withdrawal from courses will be recorded on your official transcript. See the Registrar’s Office web page for more information. I am willing to discuss your progress and strategies for improvement prior the withdrawal date.

ASSIGNMENT DESCRIPTIONS
There will be three main types of assignments for the course. A full description of all assignment will be provided to students in class. Assignment grading rubrics will be available in UMLearn.
1. **Cropping Systems Diagrams** – students will be required to create a series of systems diagrams with written explanations based on topics covered in Unit 2.
2. **Term project interview and presentation** – In groups of 3-4 students, you will be assigned an innovative farmer to interview and present a summary of the cropping system in class.
3. **Case study reports** – To assess skills gained throughout the course, students will write two short case study reports to design and explain cropping system changes for assigned topics based on your case study farm.

Referencing Style
Many different referencing styles are used within the different scientific disciplines studied within the field of agriculture. For this course, you will be expected to use the Council of Science Editors (CSE) style. This involves using both a reference list and in-text citation. A CSE style guide is Available on UMLearn. If you have questions about referencing or using style for referencing you can consult Dr. Lawley or the Agriculture Librarian, Ryan Schultz [Ryan Schultz - LibGuides at University of Manitoba (umanitoba.ca)](Ryan Schultz - LibGuides at University of Manitoba (umanitoba.ca)).

Assignment Feedback
Students will receive feedback on course assignments using grading rubrics or written feedback using comments or track changes in electronic documents or hand written on paper documents. Students can expect graded assignments to be returned within three weeks. Students will receive their grades for the midterm exam prior to the Voluntary Withdrawal date.
Assignment Extension and Late Submission Policy

Late Assignments: Assignments are due at the start of each class period. Late assignments will lose 10% per day (including weekends). Assignments will be submitted electronically in UMLearn. Assignments will not be accepted via email. If a student is unable to complete an assignment due to a medical or other emergency, contact the professor as soon as possible by email.

Missed Assignments: Students will receive a grade of incomplete until all required course assignments are submitted.

Missed Exams: Unexcused missed exams will be given a grade of zero. If a student misses an exam due to a medical or other emergency, contact the professor as soon as possible by email.

UNIVERSITY SUPPORT OFFICES & POLICIES

Writing and Learning Support

The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor’s feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: http://umanitoba.ca/student/academiclearning/

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 205 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: http://bit.ly/WcEbA1 or name: http://bit.ly/1tJ0bB4. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne
camper, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: [http://bit.ly/1sXe6RA](http://bit.ly/1sXe6RA). When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries’ homepage: [www.umanitoba.ca/libraries](http://www.umanitoba.ca/libraries).

mental health:

**For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.**

**Student Counselling Centre**
Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. **Student Counselling Centre:** [http://umanitoba.ca/student/counselling/index.html](http://umanitoba.ca/student/counselling/index.html)
474 University Centre or S207 Medical Services
(204) 474-8592

**Student Support Case Management**
Contact the Student Support Case Management team if you are concerned about yourself or another student and don’t know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team. **Student Support Intake Assistant** [http://umanitoba.ca/student/case-manager/index.html](http://umanitoba.ca/student/case-manager/index.html)
520 University Centre
(204) 474-7423

**University Health Service**
Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation. **University Health Service** [http://umanitoba.ca/student/health/](http://umanitoba.ca/student/health/)
104 University Centre, Fort Garry Campus
(204) 474-8411 (Business hours or after hours/urgent calls)

**Health and Wellness**
Contact our Health and Wellness Educator if you are interested in peer support from Healthy U or information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault. **Health and Wellness Educator** [https://umanitoba.ca/student/health-wellness/welcome-about.html](https://umanitoba.ca/student/health-wellness/welcome-about.html)
britt.harvey@umanitoba.ca

**Live Well @ UofM**
For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site: [http://umanitoba.ca/student/livewell/index.html](http://umanitoba.ca/student/livewell/index.html)
Copyright:

All students are required to respect copyright as per Canada’s Copyright Act. Staff and students play a key role in the University’s copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The Copyright Office provides copyright resources and support for all members of the University of Manitoba community. Visit http://umanitoba.ca/copyright for more information.

University and Unit policies, procedures, and supplemental information:

Your rights and responsibilities

As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.

The Academic Calendar http://umanitoba.ca/student/records/academiccalendar.html is one important source of information. View the sections University Policies and Procedures and General Academic Regulations.

While all of the information contained in these two sections is important, the following information is highlighted.

- If you have questions about your grades, talk to your instructor. There is a process for term work and final grade appeals. Note that you have the right to access your final examination scripts. See the Registrar’s Office website for more information including appeal deadline dates and the appeal form http://umanitoba.ca/registrar/

- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the Academic Integrity regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support http://umanitoba.ca/academicintegrity/ View the Student Academic Misconduct procedure for more information.

- The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected conduct yourself in an appropriate respectful manner. Policies governing behavior include the:

  Respectful Work and Learning Environment
  http://umanitoba.ca/admin/governance/governing_documents/community/230.html

  Student Discipline
  http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html and,
Violent or Threatening Behaviour
http://umanitoba.ca/admin/governance/governing_documents/community/669.html

- If you experience Sexual Assault or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The Sexual Assault policy may be found at:
  http://umanitoba.ca/admin/governance/governing_documents/community/230.html
  More information and resources can be found by reviewing the Sexual Assault site
  http://umanitoba.ca/student/sexual-assault/

- For information about rights and responsibilities regarding Intellectual Property view the policy https://umanitoba.ca/governance/sites/governance/files/2021-06/Intellectual Property Policy - 2013_10_01 RF.pdf

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site http://umanitoba.ca/faculties/

Contact an Academic Advisor within our faculty/college or school for questions about your academic program and regulations http://umanitoba.ca/academic-advisors/

Student Advocacy

Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic or discipline concerns.
http://umanitoba.ca/student/advocacy/
520 University Centre
204 474 7423
student_advocacy@umanitoba.ca