

Syllabus

PLNT 3540 Weed Science
(Winter 2023)

Faculty of AFNS



University
of Manitoba

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COURSE DETAILS

Course Title & Number:	Weed Science PLNT 3540
Number of Credit Hours	3 Credit Hours
Class Times & Days of Week:	10:00-11:20 T, R
Location for classes/labs/tutorials:	Classes Ag. 134 Labs Ag. 138
Pre-Requisites:	BIOL 1020, BIOL 1030, AGRI 1500, or consent from the instructor

Instructor Contact Information

Instructor(s) Name & Preferred Form of Address:	Dr. Rob Gulden
Office Location:	225 Agriculture Building (in Plant Science main office) or 115 Plant Science
Office Hours or Availability:	After lectures, I will be available for 15-20 minutes to answer any questions. If this is not suitable, please contact me via e-mail or set up an appointment.
Office Phone No.	204-474-6080
Email:	Lecture and course: Rob Gulden: rob.gulden@umanitoba.ca Laboratory inquiries: Jonathan Rosset: Jonathan.Rosset@umanitoba.ca <i>Note:</i> All email communication must conform to the Communicating with Students university policy.
Contact:	Please feel free to contact the instructor or lab TA for any questions or concerns you may have. Every attempt will be made to respond to e-mails or calls within 2 business days. Response to e-mails and calls will be limited to regular office hours (M-F 8:30am -4:30pm).

Course Description

U of M Course Calendar Description

Identification, biology and ecology of weeds of agricultural importance in western Canada, including principles of cultural, mechanical, biological, and chemical management. Topics include weed interference, effects of rotational and management practices on weed species composition, herbicide selectivity and mechanisms of action, and emerging control strategies.

General Course Description

During the Winter 2023 semester, the course and lab will be offered live. It is highly recommended that you attend each live lecture and lab to collect iclicker marks. Lectures will not be recorded or be available outside of lecture time.

Skeleton notes of lecture material will be posted in UMLearn and should be accessed before the lectures (<https://universityofmanitoba.desire2learn.com/>).

Course Goals

The objectives of the course are for students to be able to:

- 1) Define a weed.
- 2) Identify endemic and invasive weed species present in Manitoba.
- 3) Understand the ecological principles that govern plant species, plant communities and crop-weed interactions.
- 4) Understand weed management thresholds and the critical period for weed control.
- 5) Understand effective cultural, mechanical, biological, and chemical methods for managing weeds and when to apply these.
- 6) Understand the principles that contribute to herbicide selectivity.
- 7) Design integrated weed management systems and understand the tradeoffs among weed management techniques.

Course Learning Objectives

At the end of this course, students will gain:

- 1) Technical knowledge on weeds and their management.
- 2) Critically evaluate weed management options within ecological, economic, and social constraints and design effective integrated management systems.
- 3) Improved abilities to communicate these ideas.

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

Students must be able to access class material on UMLearn, must have a valid iclicker account, and must have computing resources and standard software (e.g., MS Excel, MS Word, MS PowerPoint) to process data, generate word documents and generate material for presentations. Access to UMLearn <https://universityofmanitoba.desire2learn.com/> and iclicker <https://www.iclicker.com/>.

Use of technology such as cell phones or computers in class and labs for purposes other than the course is not allowed.

Expectations: I Expect You To

I EXPECT YOU TO:

- Attend class regularly. Lectures are held every Tuesday, Thursday 10:00am - 11:20am. Attendance is expected and iclicker marks depend on it.
- Attend each and every lab. Labs are held every Tuesday at 2:30pm unless indicated otherwise.
- Keep on schedule with the required readings and class material.
- Participate regularly in class, iclicker exercises and in the lab and participate in discussions.
- Contact me if you are unclear about some material in class or if you find an error in grading.
- Treat me and all your classmates with respect. See Respectful Work and Learning Environment Policy. This includes no texting or social media during class.
- Complete all lab reports, assignments, quizzes and exams individually unless otherwise indicated. (i) All assignments and lab projects are subject to the rules of academic dishonesty; (ii) For group work, group members must ensure that a group project adheres to the principles of academic integrity.
- Complete all quizzes and exams individually while adhering to U of M Academic Integrity policies.
- I expect you to follow all university policies on Class Communication, Academic Integrity and Covid.

Class Communication:

Example: 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.

Academic Integrity:

Example: 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.

Recording Class Lectures:

All course material is copyrighted by Robert Gulden, 2023. No audio or video recording of this material, lectures, or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission of Robert Gulden. Course materials (both paper, digital and the recorded classes and lab) 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. [Accessibility | University of Manitoba \(umanitoba.ca\)](https://www.umanitoba.ca/accessibility/) 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

Expectations: You Can Expect Me To

YOU CAN EXPECT ME TO:

- Arrive before class and stay after class to answer any questions should they arise.
- Explain and provide examples of the topics listed below in the class schedule.
- Make sufficient time outside of class to meet with students to ensure the course material is clear.
- I will ask question in class. I expect students to make an effort to respond and join in on class discussions.
- Provide an unbiased grading scheme.
- Return all graded assignments and exams within 2 weeks of the due date.
- Do my best to help you succeed in PLNT 3540 and your degree.

CLASS SCHEDULE AND COURSE EVALUATION

Begin this section with a disclaimer (i.e., 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.

Date	Class Content & Teaching Strategies	Required Readings or any Pre-class Preparation	Evaluation		
			Type of Assessment	Due Date	Value of Final Grade
All term			Iclicker*		10%
Feb. 16, 2023			Mid-Term exam	In-class	15%
March/April			Herbicide quiz	Open book online	10%
TBA			Final Exam		25%
See below			Lab**		40%
					100%

***Iclicker** - Students are required to bring their iclicker to each class. For each question asked students will receive one point for answering the question and one point for answering correctly. The iclicker grade will be determined as the sum of all questions asked during lectures and weighted according to the points earned for each question. Students that have received at least 80% of the iclicker points will receive 100% of the total allocated mark, those with 70-79% of the points will receive 80% of the total allocated mark, those with 60-69% of the points will receive 60% of the total allocated mark, those with 50-59% of the points will receive 40% of the total allocated mark, and those with less than 50% of the iclicker points will receive a grade of 0. Students must register online at <https://www.iclicker.com/>

If there are more Iclicker responses than actual students in class, I reserve the right to assign a grade of zero to all students for that session.

** Students must receive a passing grade in the laboratory portion of this course to receive a passing grade in the course.

COURSE SCHEDULE

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](#).

Topics covered during PLNT 3540 lecture:

1) Weed Biology and Ecology

- a) Weed classification systems
- b) Weed seedbanks, recruitment, interference, reproduction, dispersal
- c) Weed community structure – factors that drive community composition and implications
- d) Invasions and naturalization

2) Weed Management

- a) Basic principles, scouting, thresholds, critical period of weed control
- b) Chemical weed management – herbicides, application technology, herbicide resistance
- c) Cultural weed management – the competitive balance, mulching, weed seed management
- c) Physical weed management – tillage, mowing, burning
- e) Biological weed management – various approaches
- f) Integrated weed management – ‘many little hammers’

Lab Expectations

Students are expected to attend all labs. Plant material will be available in the greenhouse outside of the scheduled lab times. Students are expected to care for their experimental plants outside of normal lab hours. Working and communication policies in the lab are the same as outlined above for the lectures.

Lab Schedule

Date	Lab Content & Teaching Strategies	Required Readings or Pre-Class Preparations	Evaluation		
			Type of Assessment	Due Date	Value of Final Grade
Feb 28			Mid-Term exam		10%
April 4			Lab Final exam		15%
April 11			Lab Report		15%

Lab Content

- 1) Weed identification (4-5 weeks)
- 2) Experiment / Data Set
- 3) Sprayer calibrations / Case studies and problem solving
- 4) Herbicide injury symptoms

Grading

The tentative grading scale is provided, however, it may be modified.

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	95-100	4.25-4.5	4.5
A	86-94	3.75-4.24	4.0
B+	80-85	3.25-3.74	3.5
B	72-79	2.75-3.24	3.0
C+	65-71	2.25-2.74	2.5
C	60-64	2.0-2.24	2.0
D	50-59	Less than 2.0	1.0
F	Less than 50		0

Voluntary Withdrawal

The Voluntary Withdrawal date is **March 22, 2023**. Students who do not drop the course by the deadline will be assigned a final grade. Withdrawal courses will be recorded on an official transcript. Refer to the [Registrar's Office](#) web page for more information. I am happy to discuss your progress and aid in your decision throughout this course.

Assignment Feedback

Grades for all assignments and exams completed before the voluntary withdrawal date will be available before that date.

Grades for lab and other assignment due within the last two weeks of the term will be available as quickly as possible.

Assignment Extension and Late Submission Policy

Late assignments/reports will receive a grade reduction of 10% per day late.

Missed assignments will receive a grade of zero.

UNIVERSITY SUPPORT OFFICES & POLICIES

Instructors shall provide to every student the information on university support offices and policies in [Schedule "A"](#) within the first week of classes, either through a paper copy and/or via the university's student information system (i.e., Aurora, UM Learn, or such other university information system as may be approved by the university from time to time).

Refer to Schedule A (located in the same folder as this syllabus in UMLearn) for this Support and Services.