



UM | Faculty of Agricultural
and Food Sciences
Entomology

Course Title & Number:	Insect Pest Management (ENTM0620)
Number of Credit Hours:	4 credit hours
Lectures:	WebEx Monday, Wednesday, Friday. 9:30am – 10:20am
Laboratories:	WebEx and UM Learn Section B1: Thursday, 10:00am – 11:20am Section B2: Thursday, 2:30pm – 3:50pm Section B3: Thursday, 1:00pm – 2:20pm
Instructor(s) Name:	Dr. Kateryn Rochon
Office Location:	Room 215-A Animal Science/Entomology Building (however, I will be working remotely for the Fall semester)
Contact:	The best way to get in touch with me outside of class is by email. I will do my best to respond to emails within 48h.
Email:	kateryn.rochon@umanitoba.ca In accordance with University policy , electronic communication for instructional purposes must be sent to (and come from) your university email account.
Office Hours or Availability:	By appointment: The best way to make sure you catch me is to schedule an appointment. There are several ways to do this. <ol style="list-style-type: none">1) you can email me at kateryn.rochon@umanitoba.ca and request an appointment2) you can ask me before/after class or lab when you attend synchronous sessions3) you can try your luck and see if I am available to chat on MS Teams. I spend most of my day in front of the computer, so for a quick question, it might work well.

I will NOT be available on Tuesdays 10:00am-1:30pm.

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General Information

This course syllabus is your Course Roadmap: it will help you plan for this course throughout the semester and describes what is expected from you. You can find a PDF copy of this syllabus on the course webpage in UMLearn (go to <http://umanitoba.ca/umlearn>) and use your UMnetID to login).

The Voluntary Withdrawal date for this course is: November 20, 2020.

Course Description

The focus of this course is on how to apply an integrated pest management approach to a variety of different agricultural systems.

Characteristics, damage, and identification; insecticide use and safety; life histories and control of common Manitoba livestock, field and farmyard insects. General principles of pest management in agriculture will also be discussed.

The weekly labs relate directly to the lectures and cover internal and external anatomical studies and the identification of beneficial and harmful insects common to Manitoba.

Topics covered:

- Anatomy, Physiology and Life History of Insects:
 - How insect growth, development and feeding relates to routes of entry of pesticides, modes of action of pesticides, and identification of damaging stages in field scouting
- Understanding and Using Classification Systems
- Pesticides:
 - Discuss different types of pesticides, major classes (OP's, OC's, etc.), and formulations of pesticides, modes of action and LD₅₀ concept
 - Advantages and disadvantages of insecticides and alternatives (pheromones, growth regulators, etc.); transgenic crops
 - Insecticide use and pesticide safety
 - Insecticide resistance and pest management
- Economic thresholds, economic injury level concept
- Pest Management in Animal Systems and Crop Systems:
 - Scouting techniques (general principles and specific to insects)
 - Factors affecting insect impact on crops or animals
 - How to relate life history of insects to identification of the problem and control strategies. Principles are illustrated using a variety of pests and crops (e.g. grasshoppers, flea beetles, aphids, wheat midge, corn borer, etc. Insects change depending upon class background and interests but include examples that allow discussion of all the applicable management criteria).
- Pest Management in Storage Systems:
 - How to sample, control strategies during storage, common pests
- Insects on Ornamental Trees and Shelter Belts/Special topics

Course Objectives

At the completion of this course, students should be able to:

- Identify the most common livestock, crop, and stored grain pests in Manitoba, and classify them to Order.
- Explain basic insect development and life cycles.
- Define and apply the principles of Integrated Pest Management (IPM).
- Determine when control measures are required based on provided information.

Class Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students.

Week	Date	Topic	Evaluation
1	Sep. 16 Sep. 17 Sep. 18	Introduction, Define Pest, Define IPM <i>NO LAB</i> External & Internal Anatomy	
2	Sep. 21 Sep. 23 Sep. 24 Sep. 25	Physiology, insect growth and development, metamorphosis Physiology, insect growth and development, metamorphosis <i>LAB: Anatomy & Physiology, Insect orders (part 1)</i> Orders: Ametabolous and Hemimetabolous	
3	Sep. 28 Sep. 30 Oct. 1 Oct. 2	Orders: Hemimetabolous and Holometabolous Beneficial and harmful aspects <i>LAB: Insect orders (part 2)</i> Pesticides – mode of entry	Quiz 1
4	Oct. 5 Oct. 7 Oct. 8 Oct. 9	Pesticides – mode of action, classes Pesticides – formulations <i>LAB: Insecticide labels</i> Pesticides – toxicity	
5	Oct. 12 Oct. 14 Oct. 15 Oct. 16	(Thanksgiving – NO LECTURE) NO LECTURE <i>LAB: Practice lab exam (formative)</i> Pesticides – safety	
6	Oct. 19 Oct. 21 Oct. 22 Oct. 23	Insecticide Resistance Economic Injury Level <i>LAB: Crop pests & Beneficial insects (part 1)</i> Sampling, beneficial insects and crop management	Quiz 2
7	Oct. 26 Oct. 28 Oct. 29 Oct. 30	Biological Control Crop Pests – Sunflowers <i>LAB: Crop pests & Beneficial insects (part 2)</i> Crop Pests – Canola	
8	Nov. 2 Nov. 4 Nov. 5 Nov. 6	Crop Pests – Canola, Cereals Crop Pests – Cereals, Corn <i>LAB: Livestock pests (part 1)</i> Crop Pests – Corn, Potatoes	Quiz 3
9	Nov. 9-13	(FALL BREAK – NO LECTURE)	

(SCHEDULE CONTINUED ON NEXT PAGE)

Week	Date	Topic	
10	Nov. 16	Crop Pests – Soybeans, Forages	Quiz 4
	Nov. 18	Crop Pests – Small Fruit, Other	
	Nov. 19	<i>LAB: Livestock pests (part 2)</i>	
	Nov. 20	Livestock pests – non-biting flies	
11	Nov. 23	Livestock pests – non-biting flies	
	Nov. 25	Livestock pests – grazing systems	
	Nov. 26	<i>LAB: Review</i>	
	Nov. 27	Livestock pests – grazing systems	
12	Nov. 30	Livestock pests – confined systems	Quiz 5
	Dec. 2	Livestock pests – confined systems	
	Dec. 3	<i>LAB: Lab Final Exam (15%)</i>	
	Dec. 4	Stored Products Pests	
13	Dec. 7	Stored Products Pests	
	Dec. 9	Review	

Dec. 10-21 Final Exam Period – exact date for ENTM 0620 to be announced.

Course Evaluation Methods

Examination Schedule	Date	Percentage of Final Grade
Lecture (60%):		
Online Quizzes (5)		25 %
Pest Management Plan		20 %
Final Lecture Exam:	To Be Announced (December 10-21)	15 %
Lab (40%):		
Lab assignments		25 %
Final Lab Exam:	Thursday, December 3	15%
Total		100%

Grading

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	>92	4.25-4.5	4.5
A	86-92	3.75-4.24	4.0
B+	79-85	3.25-3.74	3.5
B	72-78	2.75-3.24	3.0
C+	65-71	2.25-2.74	2.5
C	58-64	2.0-2.24	2.0
D	50-57	<2.0	1.0
F	<50	0	0.0

Missed Exam Policy

The exam schedule is provided to you so you can plan ahead. This includes checking for scheduling conflicts. If you know ahead of time that you will not be able to write an exam at the scheduled time, notify me right away. If you come to me early on, I will try to accommodate your needs.

It is your responsibility to be present during scheduled examinations. If you are absent (i.e., you miss your exam), you will need to provide justification. If you miss a quiz or are late on an assignment, contact me by email as soon as possible (within 48 hours of the deadline) to explain and make arrangements.

Contact your academic advisor/Student Services within 48 hours for a missed final exam.

Textbook, Readings, Materials

Supplementary information and readings will be supplied on the course website on UMLearn.

Course Technology

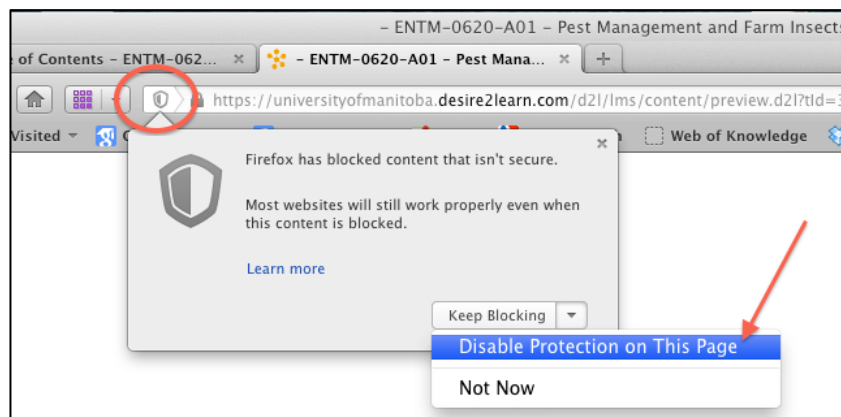
UMLearn

To access UMLearn, go to <http://umanitoba.ca/umlearn> and login using your UMnetID. Find “ENTM-0620 – Insect Pest Management” in the “My Courses” section, and click on the link to the course page.

Using UMLearn with Chrome or Firefox browsers:

The most recent versions of the software have different display settings for pages with mixed content (ex., embedded YouTube videos, links to public websites, etc.) preventing non-secure content to be displayed.

When viewing a page with mixed content in UMLearn, click the “shield” icon that appears on the right side of the address bar. In Firefox, select “Disable Protection on This Page”; in Chrome, select “Load unsafe script”.



Policies on Recording Devices in the Classroom (including online)

The instructor(s) hold copyright over the course materials, presentations and lectures that form part of this course. ***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 from Kateryn Rochon.*** Course materials (both paper and digital) are for the student's private study and research, and must not be shared, reproduced, distributed, or posted online without permission. Violation of these and other Academic Integrity principles will lead to serious disciplinary actions.

If you have a disability and require materials in alternative formats, please make arrangements through Student Accessibility Services.

Expectations and Policies**I expect you to:**

- Attend live lectures every Monday, Wednesday, and Friday starting at 9:30 AM, or listen to recordings within 24 hours of their posting. This will ensure you are up to date to perform assessments as scheduled.
- Treat me and your fellow classmates with respect. This includes using appropriate greetings and language in class (including online), in email, and in all written assessments. You can expect the same courtesy from me in return. See [Respectful Work and Learning Environment Policy](#).
- Complete all coursework and assessments with integrity. Plagiarism, duplicate submission, cheating on quizzes, tests, and exams, inappropriate collaboration, academic fraud, and personation are in violation of the Student Discipline Bylaw and will lead to the serious [disciplinary action](#).
- Communicate with me if you are falling behind or if you cannot meet assessment deadlines. If you have, or think you may have, a disability (ex., mental illness, learning, medical, hearing, injury-related, visual), please contact [Student Accessibility Services](#).

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. 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.

Policy on Respectful Work and Learning Environment

http://umanitoba.ca/admin/governance/governing_documents/community/230.html

Policy on Student Discipline

http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html

Policy on Violent or Threatening Behaviour

http://umanitoba.ca/admin/governance/governing_documents/community/669.html

For information about rights and responsibilities regarding **Intellectual Property** view the policy [http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy - 2013 10 01.pdf](http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.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

Student Support

Writing and Learning Support

The Academic Learning Centre (ALC) offers writing and learning supports to help you throughout your academic program. These supports are offered online during the Covid-19 pandemic.

Make an appointment with an ALC 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. The ALC also has an English as an Additional Language (EAL) specialist available to work with students on improving their English-language academic writing skills.

Consult an ALC learning specialist or attend an academic skills workshop to improve your time management, learning strategies and test-taking strategies. Get support in select courses by making

an appointment with an ALC content tutor. The ALC also offers peer-facilitated study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In SI study groups, students ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

In addition to one-to-one and group sessions, you can also find writing and study tip sheets and videos on the ALC website.

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/>

Contact the Academic Learning Centre by calling 204 480 1481 or emailing academic_learning@umanitoba.ca.

University of Manitoba Libraries (UML)

Research begins at [UM Libraries](#). [Learn at the Libraries](#) is a great place to start, with information for students on academic writing, how to search the library, evaluating resources, and writing citations. 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 locating appropriate resources or managing citations, 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 online. When working remotely, students can also receive help online through [Ask Us!](#) chat. For further detail about the libraries' services and collections, [visit the Libraries' web site](#). Regularly check our [COVID-19 Update](#) page for available library services and access to resources for Fall 2020

Student Accessibility Services

If you are a student with a disability, please contact SAS for 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.

Students with temporary disabilities such as sprains and breaks are also eligible to use our services.

More information here: <http://umanitoba.ca/student/saa/accessibility/>

Student Accessibility Services

520 University Centre

204 474 7423

Student_accessibility@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>

Student Mental Health and Wellness**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>

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>

520 University Centre

204 474 7423 (Student Support intake Assistant)

Sexual Violence Resource Centre

If you experience **Sexual Assault**, or are seeking information about how to help someone else, please know that there are supports and resources available to you whether or not you choose to report the assault. SVRC provides inclusive, survivor-centred, trauma-informed services, such as consultation, referrals, safety planning, and a range of on-site supports, including counselling by Klinik.

Sexual Violence Resource Centre <https://umanitoba.ca/student-supports/sexual-violence-support-and-education>

537 UMSU University Centre

204 474 6562 (Sexual Violence Intake and Triage Specialist). svrc@umanitoba.ca

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/>

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 seeking information on health topics, including physical and mental health concerns, alcohol and substance use harms, or sexual violence. You can also access peer support from a *Healthy U* peer health educator.

Health and Wellness Educator <https://umanitoba.ca/student/health-wellness/welcome-about.html>
britt.harvey@umanitoba.ca

469 University Centre

204 295-9032