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**The University of Manitoba
Faculty of Agricultural and Food Sciences**



UNIVERSITY
OF MANITOBA

Faculty of Agricultural
and Food Sciences

**COURSE TITLE: Introduction to Applied Entomology
Department: Entomology
Course Number: ENTM 3190**

Academic Session: Fall 2020

Credit Hours: 3

Prerequisites: None

Department Office location: Animal Science Building 214

Department Phone Number: 204-474-9257

Instructor Information

Name & Title: Rob Currie, Professor and Head, Department of Entomology

Email Address: Rob.Currie@umanitoba.ca

Office Location: Animal Science/Entomology Building 214a

Office Phone Number: 204-798-9020 or
Video conference through webex on UMLearn

Office Hours: Any time by appointment, please email to arrange time

Undergraduate Calendar Description

A course providing a foundation in applied entomology covering topics including: basic insect biology, insect pest management, insect biodiversity and the biological services provided by insects. Online lecture presentations, weekly readings and online laboratories. Prerequisites: none. May not be held with ENTM 3170

Have you ever wanted to learn more about the insects that impact your health, food, and environment? This course begins with a brief introduction to insect biology and ecology and then explores the field of applied entomology including insect pest management, insect biodiversity and services provided by insects.

Course Goals

Upon successful completion of this course you should be able to:

- recognize prominent beneficial and pest insects found in North America;
- identify the beneficial services that insects provide humans and the environment;
- outline the ecological and economic importance of both beneficial and pest insects;
- describe a range of methods to control insect pests, including their strengths, weaknesses and compatibility;
- identify and collect the pertinent information to make informed-management decisions; and
- research, integrate and communicate information on current topics in applied entomology.

Course overview

This course provides a foundation in basic insect biology and the field of applied entomology. You will initially be introduced to insect importance, biology and ecology. The remainder of the course is devoted to specific applied entomology topics with an emphasis on insect pest management and ecosystem services. Course labs initially cover insect anatomy and identification, then shift towards asking you to collect biological and management information for major types of pests.

Learning activities

In this course you will have three major sources of information: the course textbook readings, the synopsis material presented by your instructor on the course website (lecture and lab material), and government and university extension websites. They are meant to be used together in the following fashion: The course website provides you with the outline of the essential elements of each lesson, while the textbook readings provide the bulk of information on each lesson. Reading the online material alone is insufficient for success in this course. The government and university extension websites are essential for the completion of the weekly lab tasks.

1. Knowledge building through individual activity:

You will be asked to complete readings each week, including sections from the textbook, online lecture material and online lab material. It is recommended you complete the textbook readings prior to the online content each week. It is also suggested you complete all readings before commencing the other activities. Throughout the course there will be a number of assignments to be completed individually and include: weekly lab assignments and a formal lab report. There are three tests: two term tests, and an insect identification quiz.

2. Knowledge building through collaborative activity:

Each week, you will be required to collaborate with your student colleagues to complete the weekly lecture assignment. This will allow you to develop collaborative research and writing skills needed if you intend to continue your career in science and will also allow you to discuss difficult topics with your colleagues to get help as needed.

3. Knowledge building through self-analysis:

Three self-assessment quizzes, each covering three weeks of course material will be available. These short, open book, multiple choice quizzes are designed to provide instant feedback on your understanding of course topics. They serve as excellent preparation for the term tests and as a self-check, before leaving a unit you should ensure you can answer all questions.

Evaluation

For each piece of work you will receive a percentage mark. That mark, as a portion of your coursework will receive the weighting noted below. All final grades are subject to departmental review.

Evaluation	Percentage
Lab assignment	20%
Lecture assignments (3)	45%
Discussion participation	10%
Term Tests (2)	20%
Insect ID quiz	5%

	100%

Letter Grade Equivalency:

A+ = >90%; A=80-89%; B+ =75-79%; B=70-74%; C+=65-69%; C=60-64%; D=50-59%; F=<50%.

Assignments

1. **Lecture assignments** (45% of overall course mark, 10% Unit 1, 25% Unit 2, 10% Unit 3): Each week you will be presented with problem or question-based activities that will challenge you to apply the knowledge that you have gained through text readings and online lecture material. The weekly assignments will count for 45% of the overall course grade. Assignments will be consolidated into three assignment packages, one per course unit. You are expected to complete each week's assignment prior to moving on to the following weeks content.
2. **Lab assignments** (20% of overall course mark): Beginning in week 4 (Start of Unit 2), a different group of pests (or insects) will be examined on a weekly basis. Each week, you will be provided with a list of insects that you must collect specific information for. You will complete a similar style assignment each week, and at the end of the course produce one final document containing all 7 weeks of material for grading.

Note: Detailed instructions about the assignments are found in the assignment section in your course website.

Assignment due dates

Consult your course schedule/announcements for the specific assignment due dates.

Examinations

There will be no formal final exam for this course however a series of tests will be used as outlined below:

1. **Self-assessment quizzes:** (Optional) There will be three self-assessment quizzes, each covering 3-4 weeks of course material. These short, open book, multiple choice quizzes are designed provide instant feedback on your understanding of course topics.
2. **Insect identification quiz:** (5% of overall mark) The focus of the first two labs is to familiarize you with insect anatomy and insect identification. The quiz should be completed after you have completed the first two labs. The quiz will challenge you to identify anatomical structures and identify adult and juvenile insects to order.
3. **Term Tests** (20% of overall mark, 10% each) There will be two timed online term tests on material presented in the lecture and lab portion of the course. Each test will consist of a series of short answer questions and longer integrative written questions.

Course Materials (Required)

The following textbook is available for purchase from the [University of Manitoba Bookstore](#). **The textbook has been published by two different publishers; either version listed below is acceptable.** Please order your materials immediately, if you have not already done so. See your Distance and Online Education Student Handbook for instructions on how to order your materials.

- Pedigo, L.P. & M.E. Rice. 2009. Entomology and Pest Management. Sixth Edition. Prentice Hall, Upper Saddle River, N.J. xxvii + 749 pp.
- Pedigo, L.P. & M.E. Rice. 2015. Entomology and Pest Management. Sixth Edition. Waveland Press, Long Grove, Il. xxvii + 749 pp.

Course Philosophy

Students' Learning Responsibilities

Students should approach this course with academic integrity, take responsibility for their actions and honor their academic commitments. Students are encouraged to ask for assistance whenever they feel it is necessary. Students should treat their fellow students with respect and foster a cooperative learning environment where other's ideas are heard and discussed.

Course Policies

Inquiries to Instructor

Students are encouraged to contact their instructor in person or by e-mail or phone whenever assistance is required. You are required to obtain and use your U of M email account for all communication between yourself and the university.

UM Learn (<https://universityofmanitoba.desire2learn.com/d2l/login>)

Course materials (i.e. lecture notes) are solely available on UM Learn, it is your responsibility to learn how to access this page.

Late Assignments

Penalties for late submission of assignments are 10% per day late. For assignments submitted electronically, the timestamp/date when the assignment was uploaded to Dropbox via the course page will be used as the assignment submission date.

Missed Assignments

Assignments ten or more days late will receive a mark of zero. Unexcused assignments that are not submitted will receive a mark of zero and an incomplete course grade. When assignments are missed and excused through written notification such as a doctor's note, evidence of death in the family, or other circumstances beyond the control of the student, a new due date for the assignment may be arranged by contacting the instructor.

Academic Integrity

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room. Exam cheating can also include exam impersonation. A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty. Electronic detection tools may be used to screen assignments in cases of suspected plagiarism. Students should acquaint themselves with the University's policy on plagiarism, cheating, exam impersonation and duplicate submission (see Section 7, p. 29 in the University of Manitoba Undergraduate Calendar 09/10). See also <http://umanitoba.ca/libraries/units/dafoe/media/plagiarism.pdf>

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