

ENTO 412/812
Entomology and Management of Pests

Sample Syllabus and Class Calendar

General design will remain the same but dates and specific assignments will differ next class offering.

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Overview: *Principles embodied in the implementation of multifaceted tactics designed to successfully manage insect populations.*

- Entomology and Management of Pests is an upper division undergraduate and graduate level course focusing on insect pest management, primarily for crops.
- Prerequisite for this course is an introductory entomology class. Students should have a basic understanding of insect biology. An ecology class is highly recommended.

Purpose, Goals, and Objectives: The rationale of this course is to introduce you to the diversity and complexity of integrated management of insects. The goal is to develop an understanding of the concepts and principles of IPM as a complex mix of practices and technologies to efficiently manage pest populations that are specific to locales.

Learning Objectives

- Understand the terms relevant to pest management
- Understand the different tactics used to manage pest insects in crop situations
- Gain an understanding of the social and economic constraints of agriculture and pest management
- Given a situation, be able to design an appropriate management strategy with consideration for sustainability
- Increase your intellectual curiosity about the topic

Why Take This Course?

- Global crop losses to insects alone are estimated to be approximately 13%.
- The global human population is expected to grow from today's 6 billion to 9 billion by 2050.
- Global demands for sustainable production of high quality foods will increase with population.

What You Will Learn: This course is about how we can minimize competition from insects for our crops. The difficulty in producing the quantity and quality of food needed to satisfy an exponentially growing global human population could largely be met if crop losses to insects and other pests could be drastically reduced. Yet, despite modern pest management technologies, crop losses to all pests are estimated to be about 44% worldwide. Even in nations where modern technologies are affordable, crop losses to pests are about 30%.

Insects harming crops are generically called pests but pest is not a biological attribute. Instead, pest is a human-oriented designation. Insects are considered pests based on their potential for economic harm, our aesthetic evaluations, and annoyance tolerance. Small numbers of a species are tolerable, but as population size increases, negative interactions and impacts increase, and at some point they are considered pests. One final point, although the term pest is sometimes used synonymously with insects, plants and pathogens are other common crop pests and there are pests in many other taxonomic categories.

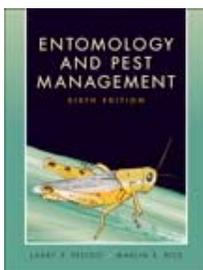
The class will focus on insect management in agroecosystems, but keep in mind; insect pests are also common in our homes and backyards, in our schools, and in our places of business. Pest management is also important to maintain environmental health in natural areas such as nature reserves, forests, grasslands, and parks.

Often, insect management in a cropping system is reactionary and designed to force a temporary reduction in insect numbers. More difficult, but often preferable, is to design agroecosystems so that insect numbers remain below a threshold value and a reactionary intervention is not needed.

We will also explore the consequences and unintended effects of insect management. The effects may be minor or major and we may not be aware of them, at least not until a later date. We also need to be aware that since pest management and agriculture are human-centric activities, there are social and political ramifications to our pest management actions and we will explore some of the relevant issues.

A prominent outcome of social pressure bearing on pest management was the development and refinement of a concept that came to be known as Integrated Pest Management or IPM. A key event that served to focus social and political pressure on the science and practice of pest management was the 1962 publication of 'Silent Spring' by Rachael Carson. Her seminal publication focused public attention and much criticism on the largely unregulated practices of pest management and resulted in a paradigm shift in pest management thinking and application.

Silent Spring had two major themes. First, chemical pesticides can be dangerous to man and the environment and should be the last rather than the first resort. Second, there are biologically based alternatives to pesticides. The themes of Silent Spring remain relevant today and I recommend you read or reread the book.



Text

Pdf copies of chapters 5 - 11, 13, 14, 16, and 17 from Entomology and Pest Management, 6th edition, Pearson Prentice Hall (Larry P. Pedigo and Marlin E. Rice. 2009) will be available in Canvas. Chapters 1 - 4 cover general entomology and provide you a useful review but we will not directly cover those chapters. Entomology and Pest Management is a good comprehensive text that will be useful to you for a long time.

You may be able to find earlier editions of the text. They can be used but may require you to search for references to figures or text boxes. The online lectures supplement and emphasize aspects of each chapter but are not comprehensive and the text is needed to provide detail. The same general material is covered in other IPM textbooks and may be a useful supplement.

Grading, Assignments, and course Calendar: Check the Syllabus folder in Canvas for Calendar and Scoring information. Assignment details are in the Assignments folder.

Professionalism. All of the work you submit for class must be professional in appearance and content. Your assignments must be developed in WORD, follow good writing practice, and be spell-checked.

Etiquette. Be courteous to others, when submitting assignments, and participating in discussions.

Americans with

Disabilities Act (ADA). Students with disabilities are encouraged to contact Christy Horn for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY (updated 8/20/07).

Office

Hours. I encourage you to call or send an email anytime. I will check emails during the day and on weekends and usually will check once in the evening. I will do my best to respond within 24 hours but that may not always be possible. Please do not expect me to respond late at night.

Technical/Computer

Requirements. In order to take this course, you must have:

1. E-mail
2. An Internet connection
3. Microsoft Word
4. Adobe Acrobat reader (go [here](#) for a free download)

The technology skills you will need to succeed in this course are a basic familiarity with your Web browser, e-mail, word processing, and the ability to locate specific information on the Internet. You must also know or learn how to use Canvas courseware.

Academic Dishonesty:

The University of Nebraska-Lincoln has a policy about academic dishonesty, as indicated in the [Student Code of Conduct](#). As a student at UNL, you enjoy rights and protections under the code and are obligated to conduct yourself in compliance with the code. An area where students occasionally have some confusion is plagiarism. The key concept here is misrepresenting the work of another as one's own. See the Office of Graduate Studies essay on [plagiarism](#), including examples and strategies to cite others work.

As the Student Code of Conduct indicates, academic sanctions for misconduct subject to appeal are at the discretion of the instructor, and may include giving the student a failing grade for the course. In this course, the least penalty I will impose for misconduct is a one letter grade reduction in the course grade, but in most instances the penalty for cheating will be a failing grade in the course.

Work

Load: I often get questions about the workload. The class pace is fast. I used to teach the same material in an 18-week semester but given that the summer term is only 5 weeks you will need to be working on something for the class almost daily. However, to accommodate working schedules due dates are almost always on Sunday.

A typical follow-up question often is something like, "How many hours would a typical student spend a day working on the class?" Unfortunately, I can't answer that question. I don't have any information and I don't know how efficient you are. Beyond the general advice of spend time on the class every day and adjust as you go. If you find yourself ahead of the schedule, well and good. You can turn in materials early or reward yourself with a day off.

HELP!!

~~**Blackboard.** Various student resources are available for any issues you experience with Blackboard® courseware and any other technical problems that might arise during the course of the semester. You can find a list of helpful resources under "Online Help Resources" on the "My UNL" Blackboard page.~~

~~UNL Blackboard Help Desk~~

~~Phone: (402) 472-3970~~

~~E-mail: helpdesk@unl.edu~~

We will be using CANVAS this summer, UNL's new course management software. I will be updating this section and other references to Blackboard.

Library

Services. UNL distance students have access to a tremendous resource- UNL's Library Services! If you are using Blackboard, there is a tab at the top of the page, "UNL Library"-just click and you are there. This web site can also be accessed directly at <http://libraries.unl.edu/>.

Clicking [here](#) will take you to the UNL Library Distance Education page where you will be able to read about the various services UNL's Library Services provide to distance learners.

This page has information about the document request form, information about liaison librarian services, various delivery options (including web delivery), and much more.

The Entomology subject librarian is Leslie Delserone, ldelserone2@unl.edu. Leslie had revised and updated, the [Entomology Subject Guide](#) with new e-content and cleaner linking to e-journals. A valuable addition is the availability of Biological Abstracts (1926-present) and CAB Abstracts

(1910-present) via the Web of Science platform, allowing access to the 'cited references' and 'times cited' data for the citations in these two databases.

For information about other services contact the C. Y. Thompson Library

C.Y. Thompson Library

402-472-9568

Ask the library a question: <http://libraries.unl.edu/ask>

**2015 Entomology and Management of Pests (ENTO 412/812)
Weekly Activities, Due Dates, and Assigned Points**

Most, but not all, assignments have a final due the Sunday of each class week at 12 p.m. (midnight). You can submit assignments early but you have flexibility to schedule when you work and when you submit assignments. You will need to be diligent and keep up. We have five weeks to cover what is typically an 18-week semester class.

Of necessity, this is a fast-paced class and you are responsible for your scheduling. Late assignments will **not be accepted**.

DRAFT 11 May 2017

Week 1 - July 10 to 16

Review chapters and topics: 5, 6, and 7

10 th	class begins	
11 th	Assignment 1 - Introduction.....	50
13 th & 14 th	Practice quiz (open 2 days)	25
16 st	Assignment 2	50

Week 2 - July 17 to 23

Review chapters and topics: 8, 9, and 10

22 nd & 23 rd	Quiz 1 (chapters 5, 6, 7; open 2 days)	100
23 rd	Assignment 3	50

Week 3 - July 24 to 30

Review chapters and topics: 11, 12, 13, and 14

29 th & 30 th	Quiz 2 (chapters 8, 9, 10; open 2 days)	100
30 th	Assignment 4 GAO report	50

Week 4- 31 to Aug 6

Review chapters and topics: 16 and 17

5 th & 6 th	Quiz 3 (chapters 11 – 14; open 2 days)	100
6 th	Assignment 5	50

Week 5 - Aug 7 to 10

8 th to 10 th	Final exam will be open 3 days.....	200
10 th	Class ends	

Total points – 775

** Assignment, quizzes, and exams are due by midnight of the last day listed.*

Grade and Points Earned

		Graduate	Undergraduate
Grade (points to equal or better)	A	698	659
	B	620	543
	C	543	465
	D	465	426