

IB482 - *Fundamentals of Insect Pest Management*
Fall 2019

Instructor: Dr. Larry Hanks, 420 Morrill Hall (hanks@illinois.edu)
Office hours: After class and by appointment

Lab instruction: Sarah Giers, 420 Morrill Hall (sgiers2@illinois.edu)
Office hours: During lab and by appointment

Lecture: 2 hours weekly (MW 1:00 - 1:50 pm in 336 Devenport)
Laboratory: 3 hours weekly (T 2:00 - 4:50 pm in 4074 NHB)

Credits: 3 hours

Prerequisites: IB 150 or equivalent, or consent of department

Requirements met: Satisfies course requirements for Entomology graduate students

Information about the course, announcements, lecture handouts, etc. will be posted on **Moodle**

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I. Course Description

The course material covers the ecological and evolutionary underpinnings of pest management as well as its history, including the development of insecticides and alternative methods of control such as biological control and host plant resistance, as well as the repercussions of management, such as resistance to insecticides. Several guest lecturers will present their research on topics such as chemical ecology, plant breeding, invasive species, and veterinary and medical pests. The course emphasizes how problems with insect pests arise from natural factors, as well as from the activities of humans.

II. Student learning outcomes

At the end of this course, students will:

- 1) have a broad understanding of the ecological and evolutionary factors that are responsible for insects coming into conflict with humans
- 2) know how humans have dealt with insect pests throughout history, including the invention of insecticides and development of alternative methods of control
- 3) understand how different management strategies can be combined so as to achieve effective pest control while minimizing negative effects on the environment and human society

III. Examinations and Grading

The final grade for the course will be calculated as:

Lecture: 75%

Laboratory: 25%

In turn, the grades for these components will be calculated as:

Lecture:

Exam I: 30%

Exam 2: 30%

Final: 40%

Laboratory:

Quiz 1: 17.5%

Quiz 2: 17.5%

Quiz 3: 17.5%

Quiz 4: 17.5%

Collection: 30%

The course grade will then be derived from an overall numerical average:

90 - 100% = A

80 - 89% = B

70 - 79% = C

60 - 69% = D

<60% = F

Additional information pertaining to the lecture exams:

- Attendance of lecture is mandatory, per University policy. The professor will keep a record of students that repeatedly fail to attend lecture, and the School office will be notified. Students that habitually miss lecture will not receive a grade for the course.
- Academic integrity: It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions.’ Please know that it is my responsibility as an instructor to uphold the academic integrity policy of the University, which can be found here: http://studentcode.illinois.edu/article1_part4_1-401.html
- To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in class are ask to alert the professor as soon as possible.
- Lecture exams will total 100 points and will be multiple choice. You will be responsible for all information presented in lecture (especially information that is actually printed on the handouts). Sample exam questions for the first exam (only) will be provided beforehand. **Exams must be taken on scheduled dates, regardless of whether exams in other courses are scheduled on the same day. In other words, there are no “conflict exams”.**
- **Students that miss an exam must have a valid excuse, as documented by a letter from the Emergency Dean (<http://www.odos.illinois.edu/deanon-duty/>) to take a make-up exam. The**

student must request the letter within 24 h of the scheduled exam. Make-up exams will be oral and conducted by the instructor or the TA within a week of the exam date. Questions will be drawn from lecture materials, and will be different from those used in the exam, but of similar difficulty.

- The **final exam** will be cumulative over the entire course, with half covering the first 2/3 of the lectures (in less detail than exams) and half covering the last 1/3 of lectures. The format for the final will be the same as the two other exams.

Additional information pertaining to the lab:

- The lab will provide hands-on experience to complement lecture topics. The TA will present a short introduction on the topic; students will be responsible for all information presented during lab.
- A collection will be required and **due XX November**. Specimens will be collected on lab outings in the field. Exchange of specimens among students is permitted.

V. Texts

There is no lecture text. Some recommended resources:

Pedigo, L. P. & M. E. Rice. 2006. Entomology and Pest Management, 5th edition. Prentice Hall, New Jersey.

R. L. Metcalf & W. J. Luckmann. 1994. Introduction to Insect Pest Management, 3rd edition. John Wiley & Sons, New York.

D. J. Borrer, C. A. Triplehorn & N. F. Johnson. 2005. An Introduction to the Study of Insects, 7th edition. Harcourt Brace College Publishers.

Radcliffe's IPM World Textbook (good general reference for this course):

<http://ipmworld.umn.edu/>

Lecture Topics and Exam Schedule

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Month	Date	Day	#	Topic
August	26	M	1	Course introduction
	28	W	2	Historical development of IPM
September	2	M		Labor day – no class
	4	W	3	" " "
	9	M	4	" " "
	11	W	5	Introduction to arthropod pests
	16	M	6	" " "
	18	W	7	" " "
	23	M	8	Tactics and strategies
	25	W	9	" " "
		30	M	
October	2	W	10	Tactics - Host plant resistance
	7	M	11	Tactics - Insecticides
	9	W	12	" " "
	14	M	13	" " "
	16	W	14	Guest lecture: TBA
	21	M	15	Tactics – Insecticides (continued)
	23	W	16	Tactics – Repellents and deterrents
	28	M		Exam II (Covering lectures 10-16)
November	30	W	17	Guest lecture: TBA **Andy prefers later**
	4	M	18	Tactics - Biological control **Matt Ginzel on late Monday**
	6	W	19	Tactics - Biological control
	11	M	20	Guest lecture: TBA **Matt Ginzel on late Wed**
	13	W	21	Tactics - Biological control (continued)
	18	M		ESA meeting – no class
	20	W		
	25	M		Thanksgiving – no class
	27	W		
December	2	M	22	" " " Brian Diers?
	4	W	23	" " " Brian Diers?
	9	M	24	Devising an IPM program - Future challenges
	11	W	25	" " "
	?	?		Final (0:00 - 0:00 pm in the lecture room)