Course Syllabus

PEST MANAGEMENT SYSTEMS
ENTOMOLOGY 817

Course Format

Catalog Description:

Entomology 817. Pest Management Systems, 3 CR I (odd-numbered years). Lecture 3.

Prerequisites: 10 hours of entomology and crop production courses or permission of instructor.

Study of different philosophies and theories of insect pest management, theory vs. practice of management, interactions of public and private sectors, development and implementation of pest management programs.

Instructor:

The instructor for this course will be Dr. Jeff Bradshaw, Director of the Doctor of Plant Health program and Professor of Entomology, 279E Plant Sciences (office), 107 Entomology Hall (lab), (402) 472-3345. Email: jbradshaw2@unl.edu

Course Objectives:

To provide a greater understanding of the complexity of insect and crop management; the different philosophies and theories of pest management; theory vs. practice of pest management; the conceptualization, development, implementation, and evaluation of pest management programs; and the impact of science, technology, and society on pest management trends.

Methods:

The course will consist of three lecture-discussion sessions per week. Outside readings and exercises from a variety of sources will be used to complement in-class activities. The course will be taught in person in room 202 Entomology Hall on Monday, Wednesday, and Friday.

Examinations:

There will be three examinations and a final exam scheduled during the semester. The final (two hours) will cover the entire course. All students are required to take the final.

Exercises:

Exercises will be assigned during the semester that will complement parts of the course.

Grades:

Your final grade will be based on the total score earned from written examinations, exercises, and the term project.

Exams	300
Exercises	100
Final exam	150
Term Project	100
	650 Total Points

Final letter grades will be assigned using a plus and minus system (e.g, A+, A, A-, B+, B, B-, etc.). The following grading scale will be used as a benchmark (starting point) to assign final grades.

General Grading Scale: 90% = A-, 80% = B-, 70% = C-, 60% = D-, < 60% = F

Pass/Not Pass Option: Students may elect to take the course on a pass/fail basis with the minimal passing score equivalent of "C".

Term Project:

Each individual taking the course for credit will complete a term paper on a subject area that is related to pest management (topic must be approved by instructor). The paper should address various issues (i.e. philosophical, social, theoretical, practical etc.) that impact the subject. Students are expected to incorporate information from a wide range of sources (including personal opinion) to develop in-depth discussion and justifiable conclusions. **The term papers are due at 5:00 p.m. on 8 November 2023**.

References:

Recommended text: Pedigo, L.P., M.E. Rice, and R.K. Krell. 2021. Entomology and Pest Management. 7th Ed. Waveland Press Inc., Long Grove, Ill. 584 pp.

Other references will also be provided during the semester.

COURSE POLICIES AND RESOURCES

Visit UNL's Course Policies and Resources for policies on Attendance, Academic Honesty, Students with Disabilities, Mental Health and Well Being, Emergency Procedures, Diversity and Inclusion, Title IX, and Final Exam Schedules.

Course Outline
(lecture/discussion schedule)

DATE	DAY OF WEEK	TOPIC
21 August	M	Introduction to Pest Management
23 August	W	History/evolution of pest control
25 August	F	Pesticide crisis/evolution of IPM (part I)
28 August	M	Pesticide crisis/evolution of IPM (part II)
30 August**	W**	Evolution of IPM and Policy -- Online only (Canvas)**
1 September	F	Pest management paradigms (part I)
4 September	M	No class - Holiday
6 September	W	Pest management paradigms (part II)
Principles of Integrated Pest Management		
8 September	F	Ecological framework
11 September	M	Ecological framework: *Commodity vs. lifesystem approach to management*
13 September	W	Ecological framework: *Pest mobility/ habitat structure effects on management*
Functional Components of IPM Programs		
15 September	F	Biology/ecology of pests/beneficial organisms: *Identification, lifecycles, lifetables, predicting biological events*
18 September	M	Biology/ecology of pests/beneficial organisms: *Identification, lifecycles, lifetables, predicting biological events*
20 September	W	Preventative practices

22 September	F	**Exam 1**
25 September	M	Preventative practices
27 September	W	Monitoring populations: *Sampling*
29 September	F	Monitoring populations: *Sampling*
2 October	M	Prediction of loss and risk: *Introduction to EIL, ET*
4 October	W	Therapeutic practices
6 October	F	Therapeutic practices: *Evaluation*
9 October	M	Economic injury level theory
11 October	W	Economic threshold theory: *Entomology, Plant Pathology, and Weed Science perspectives*
13 October	F	Management theory from Economics perspective
16 October	M	No class – Fall break
18 October	W	Development/implementation of IPM programs -- Online only (Canvas)
20 October	F	**Exam 2**
23 October	M	IPM program evaluation
25 October	W	IPM programs: case histories -- I*nnovation/adoption*
27 October	F	IPM programs: case histories
30 October	M	Areawide pest management -- Online only (Canvas)
1 November	W	Areawide pest management -- Online only (Canvas)
3 November	F	IPM programs: case histories
6 November	M	No class - ESA meeting
8 November	W	No class - ESA meeting -- **Term papers due**

New issues/technology: impact on IPM programs		
10 November	F	Genetically engineered organisms/plants
13 November	M	Genetically engineered organisms/plants
15 November	W	Use of transgenic plants in cotton: impact on IPM
17 November	F	**Exam 3**
20 November	M	Use of transgenic plants in cotton: impact on IPM
22 November	W	No class – Holiday
24 November	F	No class – Holiday
27 November	M	Use of transgenic plants in corn/soybean: IPM trends
29 November	W	Resistance management
1 December	F	Resistance management
4 December	M	Future of IPM
6 December	W	Future of IPM
8 December	F	Conclusion, Review
13 December	W	**FINAL EXAM: Wednesday 7:30-9:30 am**

**Instructional continuity day for volleyball.