Syllabus for Entomology 5341 – Biological Control of Insects and Weeds

Spring 2019

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Schedule & Location
Lecture: T Th 1:00-2:15 PM; 490 Hodson Hall
Laboratory: W 9:30 – 11:30 AM; 480 Hodson Hall

Office Hours: 2:15 – 3:45 T Th or by appointment

Required Reading:
- Lecture
- Laboratory

Grading:
- midterm (25%)
- final (non-cumulative; 25%)

** Note: Undergraduate students will not be responsible for contents of chapters 6, 7 in the Heimpel & Mills book on tests***

- research paper (25%; grade can be improved by oral presentation)
- laboratory grade (25%; based on lab quizzes)

COURSE OUTLINE AND TENTATIVE SCHEDULE

I. Introduction & definitions (3 sessions: 1/22 – 1/29)

Reading: Heimpel & Mills Chapter 1

A. Definition of biological control
B. Early history of biological control
C. Types of biological control
II. Invasion Biology and Classical Biological Control (9 sessions: 1/31 – 2/28)

*Reading: Heimpel & Mills Chapters 2, 3, 4, 5*

A. Invasion Biology
B. Importation BC – The scope of success
C. Importation BC – Unintended consequences
D. Importation BC – Competing Risks

**MIDTERM EXAM: 3/7 (review for midterm on 3/5)**

IV. Augmentative Biological Control (2 sessions 3/12, 3/14)

*Reading: Heimpel & Mills chapter 8*

A. Defining success in augmentative biological control
B. Population dynamics within augmentation programs
C. Improving augmentative biological control

**SPRING BREAK: 3/18 – 3/22**

V. Conservation and Natural Biological Control (4 sessions: 3/26 – 4/4)

*Reading: Heimpel & Mills chapters 9, 10*

A. Pesticide reduction
B. Habitat Management
C. BC and IPM decision-making

VI. Dynamics of Biological Control (6 sessions: 4/9 - 4/25)

*Reading: Heimpel & Mills chapters 6, 7*

A. Population regulation and biological control
B. Models of predator-prey, host-parasitoid systems
C. Community ecology and biological control
D. Biological control and Evolution

**FINAL EXAM: 5/2 (review for final on 4/30)**