

Turfgrass Pest Management
CRSS/ENTO/PATH 3500
Fall 2006

Instructors: Drs. T. R. Murphy, L. Burpee and K. Braman

Course Description: This course discusses the identification, biology, and control practices for the major insects, diseases and weeds that infest turfgrasses. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests.

Prerequisites: CRSS 2830 or CRSS 3270-3270L.

Required Text: None.

Suggested texts: Weeds of Southern Turfgrasses. Murphy, T. R., D. L. Colvin, R. Dickens, J. Everest, D. Hall and L. B. McCarty. 1992. The University of Georgia Cooperative Extension Service, Athens, GA; Handbook of Turfgrass Insect Pests. Brandenburg, R.L. and M.G. Villani. 1995. ESA Press, Lanham, MD.

Course Objectives: Upon completion of this course you should be able to adequately answer or fulfill these objectives:

1. Understand why turfgrass insects, disease and weeds are management problems in turfgrass culture.
2. Understand the regulations that govern pesticide use on turfgrass.
3. Have a better understanding of what types of pest situations pest managers face in the field.
4. Be able to identify and understand the biology of common surface-feeding, subsurface-feeding and nuisance insect pests of turfgrasses.
5. Discuss chemical and non-chemical methods used to control insect and mite problems in turfgrass.
6. Become familiar with diagnostic features and management strategies associated with common diseases of turfgrasses grown in the southeastern United States.
7. Be able to diagnose foliar and root diseases of turfgrasses.
8. Discuss both chemical and non-chemical control strategies for turfgrass diseases.
9. Identify and understand the basic biology of common turfgrass weeds.
10. Discuss both chemical and non-chemical control strategies for turfgrass weeds.
11. Understand the mode-of-action and environmental fate of turfgrass herbicides.

Course Outline: This course consists of three sections: Entomology, Plant Pathology and Weed Science. The course syllabus is a general plan for the course. Deviations announced to the class by the instructors may be necessary.

Introduction to Turfgrass Entomology

Instructors for Entomology Sections: Dr. Kris Braman, kbraman@uga.edu, 770-228-7236

- 1) Introduction to Insect Pest Management in Turf
 - a) Overview of course
 - b) General Entomology Review
- 2) Surface-feeding Insect Pests

- 3) Subsurface-feeding Insect Pests
 - 4) Beneficial Insects and Alternative Control Measures
 - 5) Nuisance Insect Pests
 - 6) Pesticide Rules and Regulations
 - 7) Pesticide Use in Turf IPM Program
 - a) Insecticide classification
 - b) Insecticide formulation
 - c) Applicator safety
 - 8) Biotic and abiotic problems of turf encountered in the field
- **Exam 1= 100 points****

Introduction to Turfgrass Disease

Instructor for Turf Disease Sections: Dr. Lee Burpee, lburpee@griffin.uga.edu, 770-412-4010

- 1) The Concept of Plant Disease
- 2) Principles of Disease Diagnosis
- 3) Principles of Disease Management
- 4) Diagnosis and Management of Foliar Diseases
 - a) Dollar Spot
 - b) Anthracnose
 - c) Brown Patch and Large Patch
 - d) Yellow Patch
 - e) Pythium Blight
 - f) Gray Leaf Spot

*****Exam 2= 50 points*****

- 5) Diagnosis and Management of Root Diseases
 - a) Spring Dead Spot
 - b) Take-All Patch
 - c) Bermudagrass Decline and Take-All Root Rot
 - d) Fairy Ring
 - e) Pythium Induced Root Dysfunction and Pythium Root Rot
 - f) Nematodes

*****Exam 3= 50 points*****

Basics of Turfgrass Weed Management, Biology and Identification

Instructor for Turf Weed Sections: Dr. Tim Murphy, tmurphy@uga.edu, 770-228-7300

- 1) Turfgrass Weed Management Basics
 - 2) Turfgrass Weed Biology and Identification
 - 3) Turfgrass Herbicides
 - a) Use Characteristics
 - b) Families and Mode-of-Action
 - c) Herbicide Fate in the Environment
 - 4) Turfgrass Weed Control
 - 5) Control of Problem Turfgrass Weeds
 - 6) Herbicide Resistant Weeds and Glyphosate-tolerant Turfgrass
- ***Exam 4= 100 points*****
- 7) Site Specific Weed Management Strategies
 - a) Golf Course Putting Greens
 - b) Athletic Fields

*****Comprehensive Final Exam= 100 points*****

University Honor Code and Academic Honesty Policy: All academic work must meet the standards contained in "A Culture of Honesty." Each student is responsible to inform themselves about those standards before performing any academic work.

Assignments: Instructors will note assigned readings in texts and/or provide handouts.

Exams: Four examinations (one entomology, two plant pathology, one weed science) and a comprehensive final will be given each semester. Exams materials will be taken from lectures and assigned readings.

Make-up Examinations: For excused absences, students may schedule a time with section instructor for a make-up exam. There will be no make-up exams for unexcused absences.

Grading Policy: Entomology and Weed Science exams are worth 100 points each. The two plant pathology exams are worth 50 points each, for a total of 100 points from this section. The comprehensive final examination will count 100 points. A total of 400 points may be earned.

The grading scale will be as follows:

A = 360 points and above

B = 320 - 359 points

C = 280 - 319 points

D = 240 - 279 points

F = 239 points and below

Attendance Policy: Attendance is required and highly recommended due to the specialized expertise and perspective that instructors and guest lecturers bring to each class. The instructor has the right to withdraw a student who has five or more unexcused absences.