

Syllabus is subject to change.

PLHL 4001
Plant Disease Management and Control
Course Information and Requirements – Spring 2019

Introduction:

The purpose of this course is to introduce students to the basic principles and concepts of plant disease management, and to reinforce these concepts with practical examples. The course includes a laboratory session that will focus on improving student skills in knowledge translation and Extension outreach communication. The course is suitable for graduate students in Plant Pathology & Crop Physiology, Entomology, Plant, Environmental & Soil Sciences, and Landscape Architecture.

Prerequisites- General Plant Pathology (PLHL 4000).

Course Description:

Plant disease management using cultural practices, disease resistance, biological control, legislation, physical therapy, and identity, properties, chemistry, mode of action, toxicity, and application and evaluation of fungicides, bactericides, and nematicides for plant disease management will be examined.

Expectations:

Students will be expected to develop a working knowledge of the general methods of plant disease management, specific methods currently in use, and a general understanding of plant disease etiology and epidemiology as they relate to managing plant disease and reducing loss. Students must develop a working knowledge of terminology related to plant disease and disease management that will allow them to understand the literature in this area and to be conversant with other agriculture professionals.

Textbook: There is no required textbook for this course.

Suggested Resources:

1. Agrios, G. N. 2005. *Plant Pathology. Fifth Edition.* Elsevier Academic Press, Burlington, MA. 922 pp.
2. Fry, W.E. 1982. *Principles of Plant Disease Management.* Academic Press, New York. 378 pp.
3. Latin, R. 2011. *A Practical Guide to Turfgrass Fungicides.* APS Press, St. Paul. 270 pp.

4. Lucas, G.B., Campbell, C.L., and Lucas, L.T. 1992. *Introduction to Plant Diseases: Identification and Management. Second Edition*. Van Nostrand Reinhold, New York. 364 pp.
5. Malloy, O.C. 1993. *Plant Disease Control: Principles and Practice*. John Wiley & Sons, New York. 346 pp.
6. Matthews, G.A. 2006. *Pesticides: Health, Safety and the Environment*. Blackwell Publishing, Oxford. 235 pp.
7. Walters, D. (ed.). 2009. *Disease Control in Crops. Biological and Environmentally Friendly Approaches*. Wiley-Blackwell, Chichester, West Sussex, U.K. 266 pp.
8. Zadoks, J.C., and Schein, R.D. 1979. *Epidemiology and Plant Disease Management*. Oxford University Press, New York. 427 pp.

Lectures: Monday and Wednesday
10:30 a.m. – 12:00 a.m.
A465 Life Sciences Annex

Laboratory: Monday
1:30 p.m. – 3:30 p.m.
308 Life Sciences

Instructor:
Boyd Padgett
428 Life Sciences
318-427-4424
bpadgett@agcenter.lsu.edu
Office Hours: 9:00 am – 10:00 am Monday and Wednesday

Lectures and laboratories:

Lecture and laboratory notes will be provided to students at the discretion of the instructors. Notes may be provided to students on, before or after each lecture/laboratory. It is the responsibility of each student to take notes and ask questions during lecture/laboratory. **Active participation in lectures and laboratories is expected.**

Assignments:

Collectively, assignments will equal 30% of your final grade. Due dates for each assignment are provided in the course outline. **Due dates are subject to change.**

1. Preparation and presentation of Power Point slides on disease management
2. Newsletter/ factsheet addressing plant disease identification and management

Exams:

Three (3) exams will be given during the semester. Exams will cover content taught during lectures and laboratories. Collectively, the exams will equal 70% of your final grade.

Grading Scale:

97 – 100 %	A+
94 – 96 %	A
90 – 93 %	A -
87 – 89 %	B +
84 – 86 %	B
80 – 83 %	B -
77 – 79 %	C+
74 - 76 %	C
70 – 73 %	C -
67 – 69 %	D+
64 – 66 %	D
60 – 63 %	D-
< 60%	F

Course Outline: Spring 2019

Date	Instructor	Lecture Topics	Lab Exercises and Topics (Mondays 1:30-3:30 pm)
1.9	B. Padgett	Course and lab objectives and expectations Review of basic concepts in plant pathology	
1.14	C. Hollier	Economic and social losses to plant diseases Disease and loss assessment	Disease assessments
1.16	B. Padgett	Principles and concepts in disease management ASSIGN DISEASE FOR POWER POINT	
1.21	MLK Holiday	NO CLASS	
1.23	B. Padgett	How pathogens establish infection and how plants defend themselves	
1.28	B. Padgett	Epidemiology and Disease Management	Communication strategies for exchanging knowledge with stakeholders Communicating with Power Point presentations
1.30	J. Richards	Genetic Resistance	
2.4	B. Padgett	Cultural and physical disease management strategies	Writing factsheets and newsletters
2.6		Exam I	
2.11	C. Overstreet	Precision agriculture and its role in nematode management	The Nematode Advisory Service-Dr. C. Overstreet
2.13	L. Datnoff	Nutrient influence on the development of plant diseases	

Date	Instructor	Lecture Topics	Lab Exercises and Topics (Mondays 1:30-3:30 pm)
2.18	R. Price	Using UAV in Disease Management	In-field demonstration
2.20	B. Padgett	Organic Farming and Disease Management Provide students with Topic for Factsheet	
2.25	B. Padgett	Pesticide Concepts	Assignment 1 Due - Power Point
2.27	Kim Pope Brown	Pesticide Safety	
3.4		<i>Mardi Gras Holiday</i>	
3.6		<i>Mardi Gras Holiday</i>	
3.11	B. Padgett	IPM and Disease Management	
3.13		Exam II	
3.18	B. Padgett	Fungicides-Part 1	Small plot research Spray Equipment/Calibration
3.20	B. Padgett	Fungicides-Part 2	
3.25	R. Singh	Disease diagnosis and pathogen detection methods	Structure and Function of Diagnostic Clinics-R. Singh
3.27	P. Price	Disease Management Research / Experiment Station	
4.1	C. Hollier	Food Security	Assignment 2 Due-Factsheet or newsletter
4.3	B. Padgett	Disease Forecasting	
4.8	M. Ferguson	Fruit/Ornamental Disease Management	Hammond Research Station???
4.15		<i>Spring Break</i>	
4.17		<i>Spring Break</i>	
4.22	S. Harrison	Breeding and Disease Management	Wheat breeding plots at Ben Hur
4.24	B. Padgett	Disease Management in Agronomic Crops	
Final Exam (TBA)			