*Syllabus is subject to change.*

**PLHL 4001**

**Plant Disease Management and Control**

**Course Information and Requirements – Spring 2015**

**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 students 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, who wish to take a single graduate course that covers the practical aspects of plant disease management.

**Prerequisites**- General Plant Pathology (PLHL 4000) and Chemistry (CHEM2060) or Organic Chemistry (CHEM 2261)

**Course Description:**

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

**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 epidemiologyas 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. – 11: 50 a.m.

A465 Life Sciences Annex Bld.

**Laboratory:** Monday

1:30 p.m. – 3:30 p.m.

308 Life Sciences Bld.

**Instructors:**

Dr. Clayton A. Hollier

428 Life Sciences Bld.

225-578-4487

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Office Hours: 8:30 am – 10:00 am Monday and Wednesday

Dr. Melanie Lewis Ivey

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Office hours: 9:00 am – 10:00 am Monday and Wednesday

**Assignments:**

1. Preparation and presentation of Power Point slides
2. News letter/ factsheet
3. Development of disease management program-written and oral

**Exams and Grading:**

Three (3) exams will be given during the semester. Collectively, the exams will equal 70% of your final grade. The three assignments listed above will equal 30% of your final grade.

During class discussions your participation is expected and questions are always welcome.

**Course Outline: Spring 2015**

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| --- | --- | --- | --- |
| **Date** | **Instructor** | **Lecture Topics** | **Lab Exercises and Topics** |
| 1/14 | C. Hollier  M. Lewis Ivey | Course and Lab objectives and expectations  Review of basic concepts in plant pathology (handout only) |  |
| 1/19 | *MLK Holiday* | | |
| 1/21 | C. Hollier | Principles and concepts in disease management |  |
| 1/26 | C. Hollier | Economic and social losses to plant diseases  Disease and loss assessment | Communication strategies for exchanging knowledge with stakeholders.  Disease assessments |
| 1/28 | C. Hollier | Epidemiology and disease management |  |
| 2/2 |  | No lecture | No Lab |
| 2/4 | M. Lewis Ivey | Cultural and physical disease management strategies |  |
| 2/9 | C. Hollier | Genetic resistance | The Nematode Advisory Service-Dr. C. Overstreet |
| 2/11 | C. Hollier | Genetic resistance |  |
| 2/16 | *Mardi Gras Holiday* | | |
| 2/18 |
| 2/23 |  | **Mid-term Exam I** | Communicating with Power Point presentations  GMOs-Group discussion |
| 2/25 | C. Hollier | How plants defend themselves |  |
| 3/2 | C. Hollier | Pesticide concepts | Communicating using social media |
| 3/4 | C. Hollier | Pesticide safety |  |
| 3/9 | M. Lewis Ivey | Public policy and disease management | Power Point Presentations |
| 3/11 | R. Singh | Disease diagnosis and pathogen detection methods |  |
| 3/16 | C. Hollier | Fungicide control | Power Point Presentations |
| 3/18 | C. Hollier | Fungicide control |  |
| 3/23 | M. Lewis Ivey | Bactericides, nematicides and fumigants | Fungicide resistance management-Group discussion |
| 3/25 | M. Lewis Ivey | Alternative disease management products |  |
| 3/30 | M. Lewis Ivey | Alternative disease management products | Careers in plant pathology- Group discussion |
| 4/1 |  | **Mid-term Exam II** |  |
| 4/6 | *Spring Break* | | |
| 4/8 |
| 4/13 | C. Overstreet | Precision agriculture and its role in disease management | Student presentations of disease management programs |
| 4/15 | M. Lewis Ivey | Integrated Pest Management (IPM) |  |
| 4/20 | M. Lewis Ivey  C. Hollier | IPM-Case studies | Student presentations of disease management programs |
| 4/22 | M. Lewis Ivey | Management of diseases in controlled environments |  |
| 4/27 | M. Lewis Ivey | Fresh produce safety and Good Agricultural Practices | Food safety and plant pathology-Group discussion |
| 4/29 | M. Lewis Ivey |  |  |
| 5/4-5/9 | **Final Exam** | | |