COURSE SYLLABUS

ENTOMOLOGY / PLANT PATHOLOGY 5110
Ecology and Management of Insects and Pathogens Affecting Trees in Forest and Urban Environments

SPRING SEMESTER, 2015

CREDITS: 03

T & R, 10:20 - 11:40 AM, 447 and 201 Kottman Hall, Columbus

Instructors: Pierluigi (Enrico) Bonello, 483C Kottman Hall, Columbus, 614-688-5401, bonello.2@osu.edu
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Office Hours: TBA

Pre-requisites: None

Textbook: None required. Supplemental reading materials in hardcopy and electronic format will be provided or will be available on the internet. Most course content will be available on CARMEN.

Useful references:

1. Sinclair, W.A. and H.H. Lyon. 2005. *Diseases of Trees and Shrubs.* Ithaca and London: Cornell University Press.
2. Tainter, F.H. and F.A. Baker. 1996. *Principles of Forest Pathology*. New York: John Wiley and Sons.
3. Johnson, W.T. and H.H. Lyon. 1988. *Insects That Feed on Trees and Shrubs*. Second edition. Ithaca and London: Cornell University Press.
4. Barbosa, P. and M.R. Wagner. 1989. *Introduction to Forest and Shade Tree Insects*. San Diego: Academic Press.

Students with disabilities: Arrangements can be made for enabling students with speech, hearing, visual, or any other medically justified impairments to participate in the course. Please contact the instructors at the beginning of the course or as soon as possible thereafter, possibly well before the first test. Failure to act in a timely manner on your part on this issue may result in inability by the instructors to appropriately accommodate you. Additional assistance is also available through the Office for Disability Services - Room 150 Pomerene Hall (Columbus) or by calling (614) 292-3307.

Course Goals:

Upon completion of the course, students should have acquired information necessary to:

1. Understand the fundamental importance of diseases and insects in forest and urban environments, including their roles as agents of ecosystem disturbance and key elements of ecosystem functioning and dynamics.

2. Identify several common, indigenous and exotic, invasive forest and shade tree insect pests and diseases on the basis of symptoms and signs. Several classroom and field examples will be provided.

3. Understand how and why tree diseases and insect pest outbreaks occur and develop in forests, nurseries, plantations, and urban environments, and how they affect ecosystem services.

4. Apply principles of integrated pest management, including a fundamental understanding of insect and disease life cycles, to management of insect pests and diseases and their economic and ecological impacts.

Student Responsibilities:

Grades will be based on points accumulated in 2 midterm exams, 3 quizzes, a term paper, and a final exam.

Material covered in class will be emphasized on exams, however, some questions may come strictly from reading assignments. Some identification of disease specimens will be included on exams. Final grades will be based on points accumulated as follows:

3 Quizzes (50 points each)	=	150 points
2 Midterms (100 points each)	=	200 points
Disease/insect term paper	=	100 points
Final exam	=	100 points
TOTAL	=	550 points (100%)

Exams will target material since the previous exam:

- **Midterm 1 – material covered since the beginning of the course;**
- **Midterm 2 – material covered between midterms 1 and 2; and**
- **Final exam – material covered between midterm 2 and the end of the course.**

Grade Assignment:

The minimum percentages and corresponding points to achieve a given grade are as follows:

Grade	Percentage	Points	Grade	Percentage	Points
A	92.5	509	C	72.5	399
A-	88.5	487	C-	68.5	377
B+	86.5	476	D+	66.5	366
B	82.5	454	D	62.5	344
B-	78.5	432	E	<62.5	
C+	76.5	421			

Extra Credit:

There will be no overall extra credit in this course, although individual tests may have extra credit questions.

As will be apparent from our class meetings, diseases and insects are major limiting factors in tree productivity and/or survival, whether the trees are located in a forest setting or in an urban landscape. Many of you are juniors and seniors. Thus, we consider this class a transition between your student world and the "real" world. We will do our best to provide the knowledge you will need to deal with tree disease and insect pests of forests, urban forests, ornamental landscapes, arboriculture, or wherever your profession takes you. Due to its relatively extensive content, the course requires careful planning and organization, strong study ethics and skills. We are confident that by the end of this class you will possess the knowledge and resources needed to manage tree health.

Academic Misconduct:

Message to the students

Adopted in 1992, the Code of Student Conduct is a set of rules that protects persons and property of the university community. As members of the university community, each of us enjoys certain rights and privileges. Among these are the right to be free from a variety of forms of discrimination and sexual harassment, the right to discuss and exchange ideas, the right to be involved in University governance, and the right to privacy. Privileges like these are accompanied by an obligation to live by the rules and policies established for the orderly operation of the university. Degree requirements, rules against plagiarism and other forms of academic dishonesty, residence hall rules, and financial aid eligibility requirements are examples of the rules that govern life on campus. Please review these rules as they apply to you during your participation in Plant Pathology /Entomology 5110. Pay particular attention to section 3335- 31-02 (Committee on Academic Misconduct, pages 45-46 of the OSU Resource Guide for Students). Academic misconduct erodes the integrity of the University and will not be tolerated. **By University rules we instructors are OBLIGATED to report any and all cases of misconduct. Therefore, all suspected cases WILL be forwarded to the University's Committee on Academic Misconduct for action.** Copies of the Resource Guide for Students may be obtained from the Student Advocacy Center, Room 205 Ohio Union (292-1111), the office of Student Judicial Affairs, Room 2025 Drake Union (292-0748), or from the College office.

In practice, this means that there will be no tolerance for submitting plagiarized work to meet academic requirements. This includes, but is not limited to, the representation of another's works or ideas as one's own; the unacknowledged use and/or paraphrasing of another person's work; and/or the inappropriate unacknowledged use of another person's ideas; and/or the falsification, fabrication, or dishonesty (i.e. cheating) in producing material for evaluation of your performance. All this shall be grounds for charges of academic misconduct and will be treated according to the above statement.

Special Provisions:
This material is available in alternative formats upon request. Arrangements can be made for enabling students with speech, hearing, or visual impairment to participate in the course. Please contact the instructor.

CLASS SCHEDULE

ENTOMOLOGY/PLANT PATHOLOGY 5110

Week	Day	Date	Lecture #	Topics
1	TUE	Jan 13	1	Introduction: course structure, syllabus, term paper; general concepts (Bonello)
	THUR	Jan 15	2	Tree anatomical features, general pathology terminology, major pathogen groups (Bonello)
2	TUE	Jan 20	3	Overview of major groups of forest and shade tree insects (Herms)
	THUR	Jan 22	4	Overview of tree / insect interactions (Herms)
3	TUE	Jan 27	5	**First Quiz;** Fungi, symptomatology, resistance, and susceptibility (Bonello)
	THUR	Jan 29	6	Damping off, root rots (Bonello)
4	TUE	Feb 3	7	Canker diseases (Bonello)
	THUR	Feb 5		**First Midterm**
5	TUE	Feb 10	8	Vascular wilts (Bonello)
	THUR	Feb 12	9	Rust diseases (Bonello)
6	TUE	Feb 17	10	Foliar diseases (Bonello)
	THUR	Feb 19	11	**Second Quiz;** Tree and wood decay (Bonello)
7	TUE	Feb 24	12	Piercing / sucking insects (Herms)
	THUR	Feb 26	13	Defoliating insects (Herms)
8	TUE	Mar 3	14	Population dynamics: case study with gypsy moth (Herms)
	THUR	Mar 5	15	Bark beetles (Herms)
9	TUE	Mar 10		**Second Midterm**
	THUR	Mar 12	16	Nematodes; bacteria; phytoplasmas (Bonello)
Mar 16-20 - Spring Break				
10	TUE	Mar 24	17	Wood-borers (Herms)
	THUR	Mar 26	18	Biological invasions: insects (case study: emerald ash borer and Asian longhorned beetle) (Herms)
11	TUE	Mar 31	19	**Third Quiz;** Biological invasions: pathogens (Bonello)
	THUR	Apr 2		Government agency perspective on tree pests (Dan Kenny, Ohio Dept. Agriculture, Tom Macy, Ohio Dept. of Natural Resources)
12	TUE	Apr 7	20	Mycorrhizae (Bonello)
	THUR	Apr 9	21	Integrated Pest Management (IPM) for tree insects (Herms)
13	TUE	Apr 14		**TERM PAPERS DUE!** Population stability and insect outbreaks in urban environments (Herms)
	THUR	Apr 16		Insecticides for management of tree-feeding insects (Herms)
14	TUE	Apr 21		**EXTRA CREDIT DUE!** Viruses, mistletoes; non-infectious diseases (Bonello)
	THUR	Apr 23		Course Review (Bonello and Herms)
FINAL EXAM – Tue, May 5, 8:00-9:45pm				