PLP 3002C / 5005C Syllabus (Fall 2007)
Fundamentals of Plant Pathology / General Plant Pathology

COURSE AND LABORATORY INSTRUCTOR: Dr. Lawrence Datnoff

LABORATORY TEACHING ASSISTANTS: Brenda Rutherford (Tuesday and Wednesday)
Ernane Lemes (Tuesday)
Joe Doney (Wednesday)

COURSE(S): Fundamentals of Plant Pathology (PLP 3002C, sections 3931 and 3933) and General Plant Pathology (PLP 5005C, sections 3937 and 3938) are taught concurrently. Undergraduates are encouraged to enroll PLP 3002C, whereas Plant Pathology graduate and DPM students are encouraged to enroll in PLP 5005C so that they can receive graduate credit. Graduate and DPM students enrolled in PLP 5005C are held to higher standards than those in PLP 3002C. They will write a paper and provide a 20 minute oral presentation on a special topic in plant disease management (to be discussed with instructor on first day of class).

PREREQUISITE: BOT 2010C or BSC 2010

CREDITS: 4

MEETING TIMES:
Lectures: Tuesday & Thursday period 4 @ 10:40-11:30 AM in 2318 Fifield
Laboratories: Tuesday or Wednesday periods 6-8 @ 12:50-3:50 PM in 2306 Fifield

INTRODUCTION: Plant pathology is the science of plant diseases, the microorganisms that cause them, and our attempts to manage them. The ultimate goal of plant pathologists is to reduce the losses caused by plant diseases, thereby increasing plant quality and quantity. Plant diseases are caused by the same types of microorganisms that cause diseases in animals and humans and, as such, many of the principles that apply to human and animal medicine apply to plant diseases. The objective of this course is to introduce the student to the many different types of plant pathogens, their basic biology, examples of the types of disease they cause, and the basic principles and concepts of their development, spread and management.

TEXT: Plant Pathology 5th Ed. (2005) by G. N. Agrios, Academic Press, Inc.

OFFICE HOURS: You are encouraged to have your questions clarified by the instructor. The best time to talk with Dr. Datnoff is at the end of the class lecture or during the laboratory period, but if that is not possible, please call or e-mail for an appointment. Brenda Rutherford also may be contacted for help.

CONTACT INFORMATION:
Datnoff: Phone: 392-3631, ext. 383
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Rutherford: Phone: 392-3631, ext. 379
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ATTENDANCE: You are expected to be present for every class. Attendance is ***mandatory*** for the laboratory portion of the course. If you will be absent, you most notify your instructor ***prior to the start*** of that day's laboratory section. *If you have more than one unexcused absence from the*

lab you will lose a letter grade, i. e. A to B, B to C, etc. Your instructor decides what an excused absence is, but typically you will need to provide a written medical excuse or get your absence approved by the Office of Student Affairs. Absences must be excused within one week of the lab you missed, or it will be counted as an unexcused absence. **There will be no make-up lab session**.

LABORATORY: The laboratory will emphasize principles and concepts of plant pathology through demonstrations and hands-on exercises using living organisms and prepared specimens. A detailed laboratory notebook will be kept for all demonstrations and exercises and will include purpose, procedure (materials and methods), observation (s) and conclusion. Laboratory notebooks will be graded on neatness, completeness, organization, etc. (See Rubric for Laboratory Notebooks).

EXAMS AND GRADING: There will be three lecture exams. The first two will be given during the regular class periods on 4 October and 8 November (see class lecture schedule). The final lecture examination is scheduled for 3:00-5:00 PM, Wednesday, December 13, in 2318 Fifield Hall. The three lecture exams will be worth 50 points each. Your laboratory notebook and a final laboratory practical exam will be worth 50 points each. For those enrolled in PLP 5005C (see graduate and DPM student section below), a paper and oral presentation will be worth 50 points each (350 points total). Your final grade will be based on the cumulative score of these assessments (250 points total for PLP 3002C and 350 points for PLP 5005C).

PLP 3002C	PLP 5005C
225-250 points = A	315-350 points = A
212-224 points = B+	297-314 points = B+
200-211 points = B	280-296 points = B
188-199 points = C+	262-279 points = C+
175-187 points = C	245-261 points = C
162-174 points = D+	227-244 points = D+
150-161 points = D	210-226 points = D
$\leq$ 149 points = E	$\leq$ 209 points = E

GRADUATE AND DPM STUDENTS: Graduate and DPM students will be required to write a paper (~10 pages not including figures, tables and references) and prepare a 20 minute oral power point presentation on plant disease control, i. e. biological, cultural or chemical (see handout). Students will need to use a minimum of 8 references that include recent journal publications, textbooks and the internet. Students will prepare an abstract for distribution one week before their presentation. *An agreed upon time for meeting will be determined.*

UF COUNSELING SERVICES: Resources are available on campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include: 1.University Counseling Center, 301 Peabody Hall, 392-1575, personal and career counseling; 2. Student Mental Health, Student Health Center, 392-1171, personal counseling; 3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual assault counseling; and 4) Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

ACCOMMODATION: Students requesting classroom accommodation must first register with the Dean of Students Office (Students with Disabilities Office, Peabody 202 at 352-392-1261). The Dean of Students Office will provide documentation to the student who must then provide

this documentation to the Instructor when requesting accommodation. Further information is available from the Disability Resource Center at http://www.dso.ufl.edu/drp/.

SOFTWARE USE / COPYRIGHT: All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

ACADEMIC HONESTY: As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." We agree to comply with the new Honor Code, which specifies that "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

Please read through the following websites. *If you are not sure what constitutes plagiarism, please contact the instructor before starting your project.*
University policy regarding "Standard of Ethical Conduct" is available from the UF Student Guide at: http://www.dso.ufl.edu/judicial/academic.php
Further information on academic honesty and integrity is available from the Graduate Student Handbook, p. 48, available from a link online at:
http://gradschool.rgp.ufl.edu/students/introduction.html

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PLP 3002C/5005C
COURSE LECTURE SCHEDULE-Fall 2007
(Numbers in parentheses refer to chapter number in text: page numbers)

Th, Aug 24:	Introduction, concept of disease, classification, history. Importance of plant diseases and crop biosecurity (1: 4-75)
T, Aug 28:	Fungal diseases (11: 386-403, 439-440; 452-453, 463-466)
Th, Aug 30:	Fungal diseases (11: 562-593)
T, Sep 04:	Asian Soybean Rust (Carrie Harmon)
Th, Sep 06:	Oomycota and Myxomycota (11:404-433)
T, Sep 11:	Bacterial diseases (12: 616-627)
Th, Sep 13:	Fastidious bacteria & Mollicutes (12: 678-686, 687-703)
T, Sep 18:	Citrus Bacterial Canker (Dr. Jeff Jones)
Th, Sep 20:	Viral diseases (14: 724-756)
T, Sep 25:	Tomato Spotted Wilt Virus (Dr. Steve Olsen)

Th, Sep 27:	Viral & viroid diseases, vectors and transmission (viruses, fastidious procaryotes) (14: 724-756, 816-825); Parasitic plants & Algae (13:705-719)
T, Oct 02:	Diseases caused by nematodes (15:826-836) (Dr. Billy Crow)
Th, Oct 04:	**Exam 1**
T, Oct 9:	How pathogens attack plants (5: 176-203) Infection, reproduction, dissemination (2: 89-103)
Th, Oct 11:	Pathogen effects on photosynthesis, transpiration, respiration (3:106-122)
T, Oct 16:	Plant defenses, biochemical (6: 217-236)
Th, Oct 18:	Plant defenses, structural (6: 210-217)
T, Oct 23:	Epidemiology- Environment & epidemics, disease forecasting (8: 266-289)
Th, Oct 25:	Effects of environment on infectious diseases (7:249-263)
T, Oct 30:	Environmental factors that cause disease (10:358-383)
Th, Nov 01:	Genetics of virulence & resistance (4: 125-160)
T, Nov 06:	Forest Pathology (Dr. Jason Smith)
Th, Nov 08:	**Exam 2**
T, Nov 13:	Biological control (9:322-329) (Dr. R. Charudattan)
Th, Nov 15:	Chemical control of Plant Diseases (9:329-347) (Dr. Bob McGovern)
T, Nov 20:	Breeding for plant disease resistance (Dr. Jay Scott)
Th, Nov 22:	Thanksgiving
T, Nov 27:	Cultural control of plant diseases
Th, Nov29:	Diagnostic methods used in the plant disease clinic (Richard McCullen)
T, Dec 04:	Lab practical exam, TBA
Th, Dec 13:	**Final Exam (Exam 3)** (3:00-5:00 PM, 2318 Fifield Hall)

PLP 3002C/5005C
Laboratory Topics-Fall 2007

Aug 28-29: Intro to PLP Lab (Figures on pg 6-8, pg 71-74)
- Symptoms and Signs of Plant Diseases (397-398)
- Microscope use
- Introduction to Literature

Sep 4-5: Soilborne fungal diseases
- *Rhizoctonia solani* (593-599)
- *Fusarium solani* and *F. oxysporum* f.sp. *radicis-lycopersici* (538-540)
- *Sclerotium rolfsii* (599-602)

Sep 11-12: Soilborne disease: Oomycota and Myxomycota
- *Phytophthora* spp. (414-421)
- *Pythium* spp. (409-414)
- Clubroot of crucifers, *Plasmodiophora brassicae* (405-409)

Sep 18-19: Vascular wilt diseases and stem cankers
- Wilt caused by forma specialis of *Fusarium oxysporum* (522-526)
- Wilt caused by *Verticillium* spp. (526-528)
- Dutch elm disease, *Ophiostoma ulmi* (528-532)
- Cucumber wilt, *Erwinia tracheiphila* (638-641, 642)
- Southern wilt, *Ralstonia solanacearum* (647-649, 650)

Sep 25-26: Leaf spots and diseases of foliage and flowers
- *Alternaria* spp. (452-456)
- *Cercospora* spp. (463, 464)
- *Cochliobolus/Bipolaris* diseases (466-473)
- *Botrytis* spp. (510-514)
- Bacterial spot, *Xanthomonas campestris* pv. *vesicatoria* (627-628, 633-635)
- Parasitic alga, *Cephaleuros* sp. (719-722)

Oct 2-3: Fruit diseases and anthracnose
- Apple scab, *Venturia inaequalis* (501, 504-507)
- Brown rot of stone fruits, *Monilinia fructicola* (507-510)
- Ergot, *Claviceps purpurea* (501-504)
- Black rot of grape, *Guignardia bidwellii* (514-516)
- Anthracnose, *Glomerella/Colletotrichum* (483-485, 487-498)
- Black spot of rose, *Diplocarpon rosae* (485-486)
- Citrus canker, *Xanthomonas axonopodis* pv. *citri* (667, 671-674)

Oct 9-10: Postharvest diseases
- *Aspergillus* and *Penicillium* spp. (553-561)
- *Rhizopus*, *Mucor*, and *Choanephora* (434-438)
- *Sclerotinia sclerotiorum* (546-550)
- *Erwinia carotovora* pv. *carotovora* (656-662)
- revisit *Monilinia fructicola* (507-510)

Oct 16-17: Nematodes (overview 826-837, 858)
- Root knot nematode, *Meloidogyne* (838-842)
- Cyst nematode, *Heterodera* (842-848)
- Lesion nematode, *Pratylenchus* (849-853)
- Burrowing nematode, *Radopholus* (853-857)
- Stubby-root nematode, *Trichodorus* (863-864)
- Foliar nematode, *Aphelenchoides* (867-870)

Oct 23-24: Bacterial diseases (review 616-627, 687-691)
- Fire blight, *Erwinia amylovora* (641-647)
- Wildfire of tobacco, *Pseudomonas syringae* pv. *tabaci* (628-629)
- Bacterial blight of bean, *Xanthomonas campestris* pv. *phaseoli* (629-630)
- Crown gall, *Agrobacterium tumefaciens* (662-666)
- Pierce's disease, *Xylella fastidiosa* (678-681)

phytoplasmas esp. aster yellows (691-694) and lethal yellows (694-695)
spiroplasmas esp. corn stunt (701)
Revisit *X. axonopodis* pv. *citri, E.c.c, E. tracheiphila, R. solanacearum*

Oct 30-31: Viruses (review 724-731, 734-743, 747-757)
tobacco mosaic virus (757-759)
potyviruses (764-773)
citrus tristeza virus (774-777)
geminiviruses, including tomato leaf curl (805-813)
tomato spotted wilt virus (795-799)
tobacco rattle virus (758-761)
viroids (816-820, 822-823)

Nov 6-7: Rusts, smuts, and leaf curls:
Wheat rust, *Puccinia graminis* (562-571)
Fusiform rust of pine, *Cronartium quercuum* f.sp. *fusiforme* (580-582)
Bean rusts including soybean rust, *Phakopsora pachyrhiza* (571-574)
Coffee (576-577) and cedar-apple rusts (574-576)
Corn smut, *Ustilago maydis* (582-585)
Bunt of wheat, *Tilletia sp.* (588-593)
Peach leaf curl, *Taphrina deformans* (445-447)
Exobasidium, http://plantclinic.cornell.edu/FactSheets/azaleagall/azaleagall.htm

Nov 13-14: Downy mildews, powdery mildews, sooty molds
Sooty molds (440)
Phyllactinia and other powdery mildews (448-452)
Plasmopara viticola and other downy mildews (427-433)

Nov 21-22: Thanksgiving: No Lab

Nov 27-28: Lab Practical Review

Dec 4: Lab practical exam in Room 2316, 10:40 a.m.
Lab notebooks due by 5 pm in Rm. 2406 Fifield Hall

THE INSTRUCTOR RESERVES THE RIGHT TO CHANGE OR MODIFY INFORMATION PROVIDED IN THIS SYLLABUS. CLASS ANNOUNCEMENTS SUPERSEDE SYLLABUS STATEMENTS.