

SYLLABUS FOREST PATHOLOGY BOTANY 394 - Fall 2015

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Office Hours: 2-4 pm Mon; 1-3 pm Fri; after Oct. 19: 1-3 pm Tues & Thurs; or by appointment

Meeting Times: Lecture 1-1:50 pm Science B 128; lab 2-4:50 Science B 128; with required field trips

Course Format: The course consists of one lecture/lab (1-5 pm Wed) and, on average, 3-6 hours of field time per week. Lecture/lab time will be spent covering the biology, symptomatology and diagnosis of major fungal and bacterial diseases of western trees, as well as mistletoes. Field identification and diagnosis is the focus of the course, with emphasis on late successional and old growth forests. Extensive required field trips will allow on-site assessment and identification of tree diseases, and quizzes and exams will take place in the field. Students are required to complete a collection of forest pathogens.

Required textbook: Sinclair W, Lyon H. 2005. *Diseases of Trees and Shrubs*. 2nd Edition.

Several additional useful resource books are listed below, in order of priority:

Pathology:

- 1) *Diseases of Pacific Coast Conifers*-USFS handbook 521 (PDF posted on Moodle)
- 2) *Forest Pathology Notes* by Partridge (PDF posted on Moodle)

Tree Identification:

- 3) *Trees and Shrubs of California* by Stuart & Sawyer (2001, U.C. Berkeley Press)
- 4) *Manual of Oregon Trees and Shrubs* (2008, 9th Edition). Available from:
http://www.northwestnatureshop.com/Natural_History_Bookstore/Books/Plants_and_Gardening/275.html

Required equipment: 10X handlens, preferably Bausch and Lomb. Order directly from:

http://www.forestry-suppliers.com/product_pages/View_Catalog_Page.asp?ID=5250;

"Write in the Rain" notebook and pencils for field notes and exams.

-Order four 5/8 x 7", "journal" style notebooks directly from: http://www.forestry-suppliers.com/product_pages/View_Catalog_Page.asp?mi=57251&title=Rite+in+the+Rain%AE+Spiral+Notebooks

Optional: machete, large hunting knife, or small hand axe.

MOODLE: Regular use of Moodle is REQUIRED of all students in BOT 394. Moodle is an indispensable tool for sharing information and documents between the instructor and students. Lecture notes, powerpoint presentations, certain assigned readings, lab and field instructions, announcements and other items will be available (sometimes exclusively) through Moodle.

Points: A student's points will accumulate through quizzes, field examinations, and the collection:

Examination	Date	Points
Written Quiz	Wed Sep 30	50
Field Examination	Sat Oct 17	50
Written Quiz	Wed Oct 28	75
Field Examination	Sat Nov 14	75
Written Quiz	Wed Dec 2	100
Field Examination	Sat/Sun Dec 1 & 2	100
Collection	Wed Dec 9	100
	Total points =	550

Grading Scale:

% of total points	Grade	% of total points	Grade
100-93	A	77.9-73	C
92.9-90	A-	72.9-70	C-
89.9-88	B+	69.9-68	D+
87.9-83	B	67.9-60	D
82.9-80	B-	59.9-0	F
79.9-78	C+		

REQUIRED Weekend Field Trips: 1) *Sat. Sept. 12*; 2) *Sat. Oct. 17*; 3) *Sat Nov. 14*; 4) *Sat/Sun Dec. 5 & 6* (overnight; camping). THESE MUST TRIPS MUST BE ATTENDED.

Additionally, excursions from campus to the **Arcata Community Forest** will take place during some of the scheduled lab times, dates TBA.

Assigned Readings: Assigned readings will be made from various sources (e.g. the Sinclair & Lyon book, research papers, Forest Service publications, etc.) throughout the semester, and students are responsible for the material contained therein.

Collection: The purpose of the collection is to enable you to become adept at finding and identifying, on your own, forest pathogen signs, disease symptoms, and indications in the field.

1. *Deadline for completed collections:* Dec. 9; 50% of the collection for each category is due on the date indicated below.
2. *When you can turn them in:* in designated class times or during office hours.
3. *Specimens needed* (all on forest trees):

Type of specimen	Number	date 50% due	date 100% due
rots (at least 3 on living trees)	10	Oct 21	Dec 9
root diseases	4	Oct 21	Dec 9
rusts	4	Oct 21	Dec 9
foliage diseases	6	Nov 4	Dec 9
cankers/proliferations	3	Nov 11	Dec 9
mistletoes	4	Nov 18	Dec 9
<i>Total</i>	31		

4. *Requirements of Collection*

a. Label on each collection, containing: General and specific location, host species, symptom(s) or indication(s), causal species, and sign(s)

b. Intact, high-quality specimens with signs and symptoms or indications required; sharing of specific specimens between students is unacceptable.

5. *Grading of Collections*: The full collection of 31 correctly identified specimens will be worth 100 points out of the 550 total.

IV. Schedule

day	date	month	type of test/field trip	lecture/laboratory topics; field trip site
Wed	26	Aug		Introduction to forest pathology; the disease cycle
Wed	2	Sep	ACF – LAB	Terminology: symptoms, signs, indications
Wed	9	Sep		Wood Decay I. Brown Rots
Sat	12	Sep	FIELD TRIP	<i>Redwood Creek/Horse Mountain</i>
Wed	16	Sep		Wood Decay II. White Rots
Wed	23	Sep		Root diseases I
Wed	30	Sep	<i>WRITTEN QUIZ</i>	Root diseases II
Wed	7	Oct		Rusts I
Wed	14	Oct		Rusts II
Sat	17	Oct	FIELD EXAM	<i>Horse Mountain</i>
Wed	21	Oct		Foliage Diseases I
Wed	28	Oct	<i>WRITTEN QUIZ</i>	Foliage Diseases II
Wed	4	Nov		Cankers & Proliferations
Wed	11	Nov	NO CLASS	<i>Veteran's Day</i>
Sat	14	Nov	FIELD EXAM	<i>Burnt Ranch</i>
Wed	18	Nov		Mistletoes I
Wed	25	Nov	NO CLASS	<i>Thanksgiving break</i>
Wed	2	Dec	<i>WRITTEN QUIZ</i>	Mistletoes II; completion of collections
Sat/Sun	5/6	Dec	FIELD EXAM	<i>Corral Bottoms/Hayfork Summit OR TBA</i>
Wed	9	Dec		completion of collections

Very useful websites:

<http://www.forestpathology.org/index.html> - *online textbook!* Contains a number of assigned readings.

<http://www.forestryimages.org/> - *vast index of forest disease images*

www.fs.usda.gov/goto/r6/fhp/online-info - *Forest Service catalog of western tree diseases*

Disease-specific webpages:

Port Orford Cedar Root Rot: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5346825.pdf

Armillaria Root Rot: http://www.forestpathology.org/dis_arm.html

Black Stain Root Disease: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5187236.pdf

Heterobasidion Root Disease: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5187205.pdf

Phellinus Laminated Root Disease: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5187461.pdf

Pitch Canker: <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74107.html>

Sudden Oak Death: www.suddenoakdeath.org

Important Dates Fall 2015: these can be found at the "Calendar of Activities & Deadlines Fall 2015" weblink at:

<http://pine.humboldt.edu/reg/pdf/CalendarOfActivitiesF15.pdf>