

Biology 337: Plant Pathology

Fall 2012

Plant Pathology is a 3-credit course that covers the nature, causes, control, and socioeconomic importance of diseases of plants. The prerequisite for this course is Biology 130 (Plant Biology).

Instructor:	Dr. Terese M. Barta TNR 465 346-4241 tbarta@uwsp.edu	Office hours 1:30-4 pm Tues, 3-5 pm Thurs, or by appointment
Class times:	Lecture: Mon & Wed, 10:00-10:50 pm, Sci A208 Laboratory: Fri, 9:00-11:50 pm, TNR 451	
Textbook:	<u>Plant Pathology</u> , 4 th edition (G.N. Agrios). This text is required and can be obtained through text rental	
Lab Materials	Laboratory handouts will be posted on the D2L website for the course and/or made available in lab.	

Additional materials needed for laboratory: Each student should obtain a three-ring notebook and unlined loose-leaf paper to make sketches of specimens and record data from experiments. Also recommended is a permanent marking pen (like a Sharpie®) for labeling lab materials.

Last day to drop course: Friday, November 9 (can drop without a “W,” Thursday, Sept. 13)

Note: There is a Desire2Learn site set up for the course.

EXAMINATIONS, ASSIGNMENTS, AND GRADING

There are 500 points in the course, based on the following point-generating evaluations:

1) Examinations (300 pts). There will be two exams during the semester and a comprehensive final exam. Each exam is worth 100 points. Except for the final exam, the exams are scheduled during the lab periods. The first exam will be on Friday, October 12, and the second exam will be on Friday, November 16. The final exam is on Monday, December 17 (12:30-2:30 pm).

2) Koch’s Postulate’s Paper (50 pts). Students are required to write a paper in scientific format based on results of our Koch’s Postulates experiment. An outline and at least one rough draft will be required. Due date for the final paper will be determined together by instructor and students.

3) Poster (50 pts). To give you, the student, greater breadth of knowledge of plant diseases, you will also prepare a poster on a disease of your choice (one *other than* those covered in lecture). The poster should describe the host, pathogen, disease cycle, prevention, control and other aspects such as economic importance. A draft of the poster is due Wednesday, November 22.

4) Lab quizzes (45 points). There are three lab quizzes, each worth 15 points. Dates are listed on the schedule. Each quiz covers the 3 or 4 previous labs.

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5) Lab notebook (50 points). Lab notebook will be evaluated for completeness, accuracy, organization, and neatness. Notebooks will be collected on the days we have exams and returned the same day. You are expected to include notes on procedures, results, diagrams or sketches, and other things that show what you are learning. The notebook should be something you work on continually, as you go, rather than be put together the day before it is due.

6) Field trip report (5 pts). Students will write a 1-2 page summary (double spaced, 1-inch margins) of one of the two field trips.

The following standard will be used for translating numerical scores into letter grades:

$\geq 92\%$ = A	77-79.9% = C+
90-91.9% = A-	70-76.9% = C
87-89.9% = B+	67-69.9% = D+
82-86.9% = B	60-67% = D
80-81.9% = B-	< 60 % = F

POLICIES ON ATTENDANCE, MAKE-UP EXAMS, AND ACADEMIC INTEGRITY

Attendance in **ALL** of the lecture and laboratory sessions is expected. Unexcused absences will affect your grade. Because of the preparation time involved and the nature of working with living organisms, make-up lab sessions will not be available. Make-up exams will be permitted **ONLY** for unavoidable emergencies provided that you have called in advance¹. If I am not available to take your call, you should leave a message on voice-mail (it will record the date and time of your call). *If you cannot call, please have someone else call.* The make-up must be scheduled within two class days of the original test date (except in cases of hospitalization) The format of the make-up exam is at my discretion, and may differ from that of the original scheduled exam.

You are encouraged to work and study with each other in order to get the most out of the laboratory experience. Lab experiments often involve working in pairs or groups. However, you are expected to work independently on examinations, quizzes and assignments (unless it is a group project). Cheating will not be tolerated. If any student is found cheating or aiding another student in cheating, I will initiate disciplinary action in accordance with section 14.04 of the UW System Administrative Code. The UW policies on academic dishonesty can be found at:

Standards and Disciplinary Procedures for UWSP can be found at:

<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>

¹ Acceptable excuses include (but are not limited to) such things as a death in the immediate family, personal injury or illness or that of an immediate family member for which a health care worker provides written verification on letterhead, a verifiable court appearance, or jury duty. Please do not ask permission to miss class to leave early for Thanksgiving break.

Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
- (b) Uses unauthorized materials or fabricated data in any academic exercise;
- (c) Forges or falsifies academic documents or records;
- (d) Intentionally impedes or damages the academic work of others;
- (e) Engages in conduct aimed at making false representation of a student's academic performance; or
- (f) Assists other students in any of these acts.
- (g) Violates electronic communication policies or standards as agreed upon when logging on initially (See www.uwsp.edu/it/policy).

Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

LECTURE TOPICS

Plant Diseases & Humanity

Concept of plant disease; types of pathogens (pp. 4-13)

The Disease Cycle & Epidemiology (Chap. 2, parts of Chap. 8)

Principles of Control (Chap. 9)

How pathogens attack plants (Chap. 3)

Plant defences (Chap. 5)

Nematodes (Chap. 15)

Bacterial pathogens (Chap. 12)

Fungal & oomycete pathogens (Chap. 11)

Mycotoxins (pp. 365-367)

Plant Viruses & Viroids (pp. 508-525)

Parasitic plants (*if time permits*; Chap. 13)

Breeding for Disease resistance (pp. 135-141)

Chemical Control of Disease (pp. 200-217)

LABORATORY SCHEDULE

Week	Date	Activity
1	9/7	Signs & symptoms; review of plant anatomy
2	9/14	Media preparation for fungi and bacteria
3	9/21	Experimental Design: The Disease Triangle; demo of nematode extraction set-up
4	9/28	Quiz #1; Koch's postulates (experiment); observe nematodes*
5	10/5	Field Trip: Plant Disease Diagnostic Clinic (UW-Madison)
6	10/12	Exam I
7	10/19	Techniques to study bacterial pathogens; crown gall inoculations; start <i>Phytophthora</i> cultures
8	10/26	Fungal pathogens: Ascomycetes & Basidiomycetes
9	11/2	Quiz #2; Zoospore-producing pathogens; Late Blight (<i>Phytophthora</i>) inoculation (potatoes)
10	11/9	Read <i>Phytophthora</i> inoculation results Tobacco Mosaic Virus experiment
11	11/16	Exam II
12	11/23	<i>Thanksgiving Holiday (No Lab)</i>
13	12/7	Observe TMV inoculations; ELISA screening for pathogens
14	12/14	Lab Quiz #3; Lab clean-up

*come in outside of class to set up on Wed., 9/26

Field Trip to Sunny Sky Farm, tentative date: Saturday morning, 9/22

You are expected to come to lab prepared. Most experiments are designed to be completed during lab periods. However, a few experiments may require you to come in outside of class time in order to make observations, do inoculations, or transfer cultures.