

Bot 453/553 Plant Disease Diagnosis

GENERAL CLASS STRUCTURE

In general, this class will take all day field trips on Thursdays and work on unknown samples Friday mornings during the 8 week summer session. There are a few exceptions which include the first day which is mostly in the class room and an overnight field trip to the Hermiston area.

Field trips will leave the Cordley Hall parking lot at 8am. Students are expected to be on time and ready to go all day. Trips will go rain or shine so students should be ready for wet or hot weather, have a packed lunch, have appropriate foot wear (mud happens), and note taking materials. Cameras are encouraged as well as a positive attitude. Trips will make all possible attempts to arrive back in the Cordley parking lot by 5pm. However, unexpected delays from trains, traffic jams, mechanical malfunctions (flat tires, etc.) are likely. Students are encouraged not to make specific plans that depend on being back precisely at 5pm.

Friday mornings from 8 to noon the lab will be open and the instructor will be available to handout and help work on unknown samples. Students may come and leave most any time but there will be short lectures or presentations at 9am that will pertain to unknown samples or balance point assignments. The first Friday is an exception when the entire morning will be devoted to instruction.

GRADING

A student's final grade for the class will be based on 100 points and attendance on field trips. A total of 80 points will be based on the diagnosis of 8 unknown diseased plant samples during the summer. The balance of 20 points can be achieved in a variety of ways including diagnosing 2 additional unknown samples, taking a 20 point final exam or accumulating extra points. Balance points will be available during the course of the summer at the instructors' discretion.

UNKNOWN "DISEASED" PLANT SAMPLES

Each week each student will get an unknown diseased plant sample to diagnose. Students are required to fill out the "unknown plant disease sample sheet" which is due by class time the following week. Each unknown will be worth 10 points and count toward the final grade. Unknowns will be handed out on Thursday or Friday. Students may volunteer for an unknown when that kind of a situation occurs during our normal field trips. Time on Friday is formally available in the laboratory (room 3077 Cordley Hall) to use microscopes and reference material. A key to the lab will be available in the B&PP main office or plant clinic to gain access at other times.

The Plant Clinic and its personnel are strictly off limits for working on unknowns.

The use of simple (inexpensive) techniques to diagnose samples is all that is expected. Isolation of possible pathogens on culture media is not expected and such media will not be made available. However, many of you have access to other labs and resources for research purposes. At the discretion of your major professor or advisor, you may carry the diagnosis as far as is feasible and practical. We will try to have a few things such as microscope slides, moist chambers, test

tubes, etc. available for your use. Emphasis should be put on writing and describing the procedures you would do next given adequate time and funding.

Although we will focus on plant pathogens in this class, unknowns could have other and/or additional problems including insects, pesticide injury, weather related problems, etc. Students are encouraged to first work on the diagnosis alone to sharpen skills and become familiar with the references. Additional evidence or opinions can be solicited from the grower/collector (if applicable), faculty, other students, etc. Please be upfront and courteous, tell the other person it is a class unknown and use common sense. I am sure the faculty will not want several students badgering them each week about unknowns.

“BALANCE” POINTS

Some of the unknowns or problems we see in the field may require additional special (expensive) tests for an accurate diagnosis. As a class we may wish to have some electron microscopy done or send a sample to Agdia (a virus testing service) or do an ELISA test or extract soil for nematodes or have plant analysis samples run. The student(s) who volunteers to "go the extra mile" will be eligible for balance points. Student teams are acceptable.

If students find glaring errors or omissions in the 2008 Pacific Northwest Plant Disease Management Handbook they also can be eligible for balance points. Errors or omissions must be major and be in fruit or ornamental sections only. For example, if aster yellows is listed as being caused by a virus or a chemical that has not been on the market for 10 years is recommended, etc. Simple name changes or minor changes in symptomology will not be accepted for extra points. All errors must be fully referenced. In addition, some common host – disease combinations may not appear in the PNWPDMH. Students may also be able to write new sections for extra points.

No more than 10 balance points will be awarded at any one time and no more than 20 balance points will be awarded per student during the course.

FINAL EXAM

The final exam will be developed and based on the number of possible points a student has left to reach 100 assigned points. If no balance points or extra unknowns are assigned then the final exam will be worth 20 points. If 1 extra unknown or special assignment is assigned for 10 points, then the final exam will be worth 10 points.

TEXTS

No text has been required however the following may be useful:

1. Pscheidt, J.W. and O'Connell, C. M., ed. 2008. Pacific Northwest Plant Disease Management Handbook. A Pacific Northwest Extension publication (Oregon State University). 642 pp.