

Fundamentals of Plant Pathology Discussion, Fall 2020

COURSE INSTRUCTOR: Dr. Brantlee Spakes Richter

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TEACHING ASSISTANTS:

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COURSE: Fundamentals of Plant Pathology Discussion (Problems in Plant Pathology, PLP 4905) is designed to be taken concurrently with the Introductory Plant Pathology lecture section. The discussion section is optional but recommended, especially for those who expect plant problem troubleshooting to be a routine part of their career, or who wish to pursue further studies in the field of plant health. Due to class size and distancing restrictions related to the current human epidemic (Covid-19, caused by SARS-CoV-2), we are unable to hold the usual laboratory meetings that would be integrated into PLP3002C. The discussion section will offset that loss, allowing deeper exploration of plant pathology, introduction to methods used in the field, and development of observational and critical thinking skills related to plant pathology and disease diagnostics.

COREQUISITE: PLP4905 Section 20PP

CREDITS: 1

COURSE WEB SITE (Canvas): <https://lss.at.ufl.edu/>

CLASS TIME: Tuesday Period 6, 12:50-1:40

TEXT: There is no textbook for the discussion session. Case studies and other reading materials will be provided for you within the class site on Canvas.

INTRODUCTION & OBJECTIVES: The discussion section is taught as an extension of the Introductory Plant Pathology lecture course. It builds on the material covered within the lecture and provides students with an opportunity to apply their knowledge to observation of plant disease samples, development of diagnostic hypotheses, evaluation of plant pathology methods and data, and analysis of case studies. The learning objectives of this course are:

1. Students will gain experience with observing and documenting plant diseases and developing diagnostic hypotheses, and will improve their skills in observation (symptoms and signs) and information management and synthesis (sample background and literature base).
2. Students will deepen their understanding of connections between pathogen biology and disease signatures, allowing them to more rapidly and confidently triage plant problems and determine their likely causes.
3. Students will gain familiarity with basic laboratory procedures relevant to plant disease diagnostics, so that they can understand and evaluate diagnostic and research reports.
4. Students will improve their awareness of the complex factors involved in plant disease management, and will be better prepared to make management decisions.

ATTENDANCE: You are expected to arrive prepared and participate in every discussion. Missed discussion activity grades may only be made up for excused absences, at the discretion of the instructor. Absences due to illness or emergency will be excused; documentation may be requested (doctor’s note, accident report, etc.). Absences due to observation of religious holidays or participation in official university functions will be excused *only with advance notice*. Absences due to personal planning (i.e., planning to be somewhere other than class during class time) will not be excused, and missed points may not be made up. There will be no make-up discussion sessions. Requirements for class attendance and make-up assignments are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

DISCUSSION MEETINGS: The class will be divided into discussion teams of 3 to 4 members. Teams are encouraged to meet together online; however, if a team agrees that in-person meetings would be beneficial to their function, we will help arrange appropriate meeting spaces. The discussion course will typically include three components each week: preparatory content (reading and/or videos) and short quiz to be completed ahead of class, an in-class team discussion with a group “deliverable” to be handed in at the end of the session, and an individual follow-up assignment. All assignments are open-book, and there are no exams.

GRADING: Grades will be weighted as follows:

Component	Percent
Preparation (individual assignments and quizzes, due ahead of discussion)	25
Discussion (group assignments submitted at end of each session)	25
Follow-up (individual assignments, due at the end of the week)	50
TOTAL	100

Preparation: Each week will have a reading or activity to be done prior to the discussion meeting. In order to ensure that students show up prepared for discussion, a short online quiz or other deliverable will be due immediately prior to your discussion class meeting time. Point values will vary according to the extent of preparation required.

Participation in Discussions: The team discussion grade will come from the weekly group deliverables, adjusted for attendance and peer evaluation. All team members that are present and fully participating will receive the full score attributed to the deliverable. Arriving late, leaving early, being unprepared, or “coasting” (not contributing substantively to the assignment) will result in a reduced individual score. Team members will be given peer evaluation checkpoints throughout the semester to monitor distribution of member contributions. A complete description of team evaluation and group assignment scoring can be found on the Team Onboarding page of the course website.

Individual Assignments: An individual assignment will be given each week. Most will consist of a short written follow-up or discussion post. Follow-up assignments will be due on Sunday nights at 11:59pm.

Grade Scale: Final grades will be designated according to the following grade scale. This course uses the grade book function in Canvas for records-keeping and grade calculation; grades will be calculated on a percentage basis, but total course points associated with each percentage are given here for your convenience. For information on current UF policies for assigning grade points, see: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Letter Grade	Percentage	Points
A	92.00 – 100	644 – 700
A-	90.00 – 91.99	630 – 643
B+	88.00 – 89.99	616 – 629
B	82.00 – 87.99	574 – 615
B-	80.00 – 81.99	560 – 573
C+	78.00 – 79.99	546 – 559
C	72.00 – 77.99	504 – 545
C-	70.00 – 71.99	490 – 503
D+	68.00 – 69.99	476 – 489
D	62.00 – 67.99	434 – 475
D-	60.00 – 61.99	420 – 433
E	00.00 – 59.99	644 – 419

ACADEMIC HONESTY

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. In this course, any violation of the academic integrity expected of you will result in a minimum academic sanction of a failing grade on the assignment or assessment. Any alleged violations of the Student Honor Code will result in a referral to Student Conduct and Conflict Resolution. Please review the Student Honor Code and Student Conduct Code at sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/

Some assignments in this course will require collaboration, and collaborative study is generally encouraged. You may discuss your answers on lab hand-in sheets and in-class participation quizzes, unless otherwise notified; however, you may not work or collaborate with others on lab quizzes, lab exams, in-class exams, or any other take-home exams or assignments. If you have any questions about expectations for a particular assignment, about what constitutes plagiarism, or about how to ensure that you are using and crediting sources appropriately, please speak with your instructor or a TA. We are here to help, and we would much rather give you the guidance you need to avoid academic integrity violations, than have to report them after they occur!

SOFTWARE USE

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.

CAMPUS HELPING RESOURCES

The University of Florida provides a wide range of student services to help with common issues which may interfere with your success, including disabilities, physical or mental illness, food insecurity, and personal safety. You can find links to many of these resources at <http://www.ufl.edu/student-life/health-safety/>. If you are experiencing problems that are interfering with your studies and you don't see an appropriate resource listed here, contact the Dean of Students Office (<https://www.dso.ufl.edu/>), and they can help connect you with the appropriate support.

Counseling Services: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/*
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Training Programs
 - Community Provider Database
- *Career Resource Center, Second Floor JWRU, 392-1601, www.crc.ufl.edu/*
 - Career planning
 - Resume preparation
 - Internship and job search assistance
 - Professional development workshops
 - Mentoring programs

Services for Students with Disabilities: 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

COURSE EVALUATIONS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

This syllabus is a living document, and may be modified during the semester. Class announcements supersede syllabus statements. Students will be notified in class and via Canvas Announcements of any changes to the course schedule. It is incumbent upon students to attend class and check announcements in order to stay informed of updates and changes to the class schedule and deadlines.

PLP 4905 Fall 2020 Discussion Schedule

Date	Topic
Sept 01	<p>Discussion Orientation</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Symptoms and Signs of Plant Diseases ○ Plant Pathology literature and resources • Preparation: Complete team preference survey • Activity: Discussion Team on-boarding • Assignment: Literature exploration
Sept 08	<p>Diagnostic information & hypothesis-building</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Sample information ○ Biotic vs. abiotic plant problems • Preparation: Find and document a putative plant disease • Activity: Guided discussion of documented plant problems, completion of diagnostic forms • Assignment: Hypothesis development & testing plan
Sept 15	<p>Plant Disease Diagnosis & Testing</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Classical & Molecular methods for confirming a pathogen ○ Confidence levels in plant diagnostics • Preparation: Reading & quiz • Activity: Peer team discussion of hypotheses & testing plans (optional plan revision) • Assignment: Virtual Ride-along in the PDC
Sept 22	<p>Fungal Pathogens</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Signatures of fungal pathogens ○ Detection and identification of fungi • Preparation: Fungal structure exploration & quiz • Activity: Examination of sample material (sample sets and loaner loupes or scheduled access to dissecting microscopes will be provided) • Assignment: Find and document a fungal plant disease
Sept 29	<p>Oomycetes</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Convergent features of fungi and oomycetes ○ Importance of proper identification • Preparation: Oomycete case study reading & quiz • Activity: Case study discussion • Assignment: Practical methods for distinguishing oomycetes from fungi
Oct 06	<p>Bacterial Pathogens</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Signatures of bacterial pathogens ○ Detection and identification of bacteria • Preparation: Bacterial methods exploration & quiz • Activity: Case examples in bacterial signatures and bacterial methods • Assignment: Classical and molecular methods in bacteriology

Oct 13	<p>Plant Pathogenic Viruses</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Plant virus symptoms and look-alikes ○ Virus detection and management • Preparation: Virus methods and case study reading & quiz • Activity: Cassava Virus Case Study discussion • Assignment: Virus management discussion post: biological and sociological factors
Oct 20	<p>Plant Pathogenic Nematodes</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Pest or pathogen? ○ Detection and identification of nematodes • Preparation: Nematode methods reading & quiz • Activity: Guided discussion: Methods Matter • Assignment: What pathogen are you?
Oct 27	<p>Genetics of Pathogen-Host Interactions</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ The pathogen arms race as population biology ○ Using differential cultivar sets to identify pathogen races • Preparation: Online module & quiz • Activity: Interpretation of differential inoculation results • Assignment: Discussion post: evolving vocabulary to describe pathogen interactions
Nov 03	<p>Pathogenicity & Virulence Factors</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ What makes a pathogen pathogenic ○ How do virulence factors define races and cultivars within a species? • Preparation: Reading & quiz • Activity: Guided discussion on pathogenicity versus virulence • Assignment: What pathogen are you, follow-up: list your weapons
Nov 10	<p>Veterans' Day – Asynchronous Activity Week</p> <p>Assignment: Plant Defense discussion posting</p>
Nov 17	<p>Epidemiology</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Modeling epidemics ○ Identifying critical drivers • Preparation: Reading & quiz • Activity: Relative impact of starting inoculum on mono- vs. polycyclic diseases • Assignment: Webidemics citrus canker simulation
Nov 24	<p>Thanksgiving Break</p>
Dec 01	<p>Risk & Management</p> <ul style="list-style-type: none"> • Focus: <ul style="list-style-type: none"> ○ Components of risk ○ Management decisions • Preparation: Case study reading & quiz • Activity: Disease Management Case Study discussion • Assignment: What pathogen are you, follow-up: managing your pathogen