

Spring 2024

PLP 3230: SURVEY OF PLANT PATHOGENS

Undergraduate online course (3 credits)

Course description: PLP 3230 is an intermediate undergraduate course which introduces the main groups of pathogens that are the cause plant disease, how they are spread and affect plants, and how they are identified and managed. The course also includes specific examples of how plant pathogens have changed the course of human history and culture.

Course prerequisites: BOT 2010 or BSC 2010.

Knowledge prerequisites: This introductory course focuses on identifying and characterizing the major plant pathogens, the diseases they cause, their lifestyles and interactions with plants, and the agricultural strategies used to prevent or manage them. To be successful, students should have a general knowledge of biology/botany/zoology.

Student Learning Outcomes – After successful completion of this course, students will be able to:

1. Recognize the history of their discovery of organisms associated with plant diseases.
2. Differentiate plant pathogens by phylogeny, morphology, and genetics.
3. Compare lifestyles of plant pathogens.
4. Distinguish plant pathogens based on disease symptoms and hosts.
5. Summarize major emerging plant pathogens in crop systems.
6. Evaluate examples of recent plant disease epidemics.
7. Research and examine plant pathogens that cause disease and spread.
8. Recommend strategies to manage plant pathogens.
9. Explain the importance of plant pathogens to modern agriculture.

LECTURES

Online course: a “start here” module and 11 “topic” modules are available with audio recording links and pdf handouts.

Instructor: Dr. Liliana M. Cano (<https://irrec.ifas.ufl.edu/cano/>)

Webpage: Canvas course link.

Contact Information: Dr. Liliana M. Cano

- **Email (the most efficient):** Use the Canvas email in priority. If you do not have access to e-learning platform, use email Lmcano@ufl.edu.
- **Office phone:** 772-577-7350 (please leave a message).
- **Office hours:** Zoom conferencing via canvas during the week can be arranged by request.

TEXTBOOKS

Required Readings:

1. Gail L. Schumann and Cleora J. D’Arcy. 2010. *Essential Plant Pathology*. Second Edition. APS Press, American Phytopathological Society, St Paul, MN. ISBN: 978-0-89054-381-8. (Chapters 1-11 and Appendix 3)
2. Gail L. Schumann and Cleora J. D’Arcy. 2012. *Hungry Planet*. Second Edition. APS Press, American Phytopathological Society, St Paul, MN. ISBN: 978-0-89054-399-3. (Chapter 14).

EVALUATION OF LEARNING

Assignment Quiz/Discussion Point values (12/12 in total: “start here” + “topic” modules 1-11):

12 Quiz	50.0 points X 12	= 600
12 Discussion	66.7 points X 12	= 800
		= 1,400

Assignment	% of grade	Point values
Quiz/Discussion	70	= 1,400
First Exam	10	= 200
Mid-Term Exam	10	= 200
Final Exam	10	= 200
Total	100	= 2,000

ASSIGNMENTS

Notes on Discussion Post Assignments: To be completed by students for each module of the course website for credit. Each submitted assignment should consist of 500 words or less. Each student needs to post a reply to at least two other students' posts to receive full credit. **Please see rubric table 1.**

Notes on Presentation Slide Assignment: To be completed by students for the first, midterm, and final exams and uploaded to the course website for credit. For this assignment, students can prepare and submit slides 3-5 PowerPoint presentation slides. Adding audio/video recordings to their presentation slides is optional. **Please see rubric table 2.**

RUBRICS

Table 1. Rubric for grading discussion post assignments (modules 1-11).

Criteria	Rating			Points
Content, organization of answer, analysis of the topic of discussion, and conclusion.	Mature skill (33.35 points)	Developing skill (20 points)	Emerging skill (6.67 points)	33.35
	Answer is complete; sufficient detail provided to support assertions. Organizes and synthesizes evidence to reveal insightful differences or similarities related to the question. States a logical conclusion with clear arguments.	Answer is mostly complete. Organizes evidence related to the question. States a conclusion with arguments. Occasional errors and poor transitions of ideas reduce clarity of the response.	Answer is incomplete. The evidence listed it is not organized and does not present a clear argument for a given position. Unsupportable conclusion.	
Response to peers	Mature skill (33.35 points)	Developing skill (20 points)	Emerging skill (6.67 points)	33.35
	Fully responds to at least two peers with substantive posts, including questions and/or comments.	Responds to peers but posts are not sufficiently substantive or are irrelevant or responds to only one peer.	Does not respond to peers or posts are not substantive, contain inaccurate information.	
Total				66.7

Table 2. Rubric for grading presentation slide assignments (first, midterm and final exam).

Criteria	Ratings			Points
Summary, organization and transitions of ideas in the slide	Mature skill (100 points)	Developing skill (75 points)	Emerging skill (25 points)	100
	The summary is complete and raises points for further discussion. Overall, the outline demonstrates skillful use of transition and connections between ideas.	The summary is complete. The organization and transitions between ideas are clear.	The summary is incomplete. The organization and transitions between ideas are unclear or nonexistent.	
Supporting material	Mature skill (100 points)	Developing skill (75 points)	Emerging skill (25 points)	100
	The relevant reference material is included.	The reference material is incomplete.	There is not reference material.	
Total				200

Grading Scale. The grading scale may be adjusted slightly, based on class performance.

Scale	Grade
93.5-100%	A
89.5-93.49%	A-
85.5-89.49%	B+
83.5-85.49%	B
79.5-82.49%	B-
75.5-79.49%	C+
72.5-75.49%	C
69.5-72.48%	C-
65.5-69.49%	D+
62.5-65.49%	D
59.5-62.49%	D-
<59.49%	E

COURSE ORGANIZATION – PLP3230 – Spring 2024

Module	Assignment	Topic	Due Date
Start Here	Quiz	Syllabus	Thursday, January 23, 2025
	Discussion	Introductory discussion	Thursday, January 23, 2025
Module 1	Quiz	Why study plant pathogens?	Thursday, January 30, 2025
	Discussion	The Irish potato famine	Thursday, January 30, 2025
Module 2	Quiz	Bacteria that cause plant disease	Thursday, February 6, 2025
	Discussion	The use of antibiotics to combat citrus greening disease	Thursday, February 6, 2025
Module 3	Quiz	Fungi that cause plant disease	Thursday, February 13, 2025
	Discussion	Coffee leaf rust fungal disease and climate change	Thursday, February 13, 2025
Module 4	Quiz	Oomycetes that cause plant disease	Thursday, February 20, 2025
	Discussion	Rapid emergence of fungal-like pathogens in agriculture	Thursday, February 20, 2025
First Exam	Presentation Slides	Content from modules 1-4	Monday, February 24, 2025
Module 5	Quiz	Viruses that cause plant disease	Thursday, February 27, 2025
	Discussion	Viral origins	Thursday, February 27, 2025
Module 6	Quiz	Parasitic plants that cause plant disease	Thursday, March 6, 2025
	Discussion	Disease management of witchweed, a destructive parasitic plant	Thursday, March 6, 2025
Module 7	Quiz	Nematodes that cause plant disease	Thursday, March 13, 2025
	Discussion	How to control root-knot nematodes	Thursday, March 13, 2025
Module 8	Quiz	Abiotic factors that cause plant disease	Thursday, March 27, 2025
	Discussion	Frost damage in cereals	Thursday, March 27, 2025
Midterm Exam	Presentation Slides	Content from modules 5-8	Monday, March 31, 2025
Module 9	Quiz	Types of diseases caused by plant pathogens and disease diagnostics	Thursday, April 3, 2025
	Discussion	Diagnostics of the future	Thursday, April 3, 2025
Module 10	Quiz	Plant interactions with pathogens	Thursday, April 10, 2025
	Discussion	GMOs for disease resistance	Thursday, April 10, 2025
Module 11	Quiz	Influence of people in plant disease epidemics, disease management, and the future of agriculture	Thursday, April 17, 2025
	Discussion	International Agricultural Research Centers	Thursday, April 17, 2025
Final Exam	Presentation Slides	Content from modules 9-11	Monday, April 21, 2025

UF POLICY

Academic Honesty: UF students are bound by the Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of TAs in this class. It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. This policy will be vigorously upheld at all times in this course. **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. **Online Course evaluations:** Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/>. **Campus Helping Resources:** 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, <https://counseling.ufl.edu/>; Career Resource Center, First Floor JWRU, 392-1601, <http://www.crc.ufl.edu/>; Emergencies, University Police Department: 392-1111 or 9-1-1.* **Students with Disabilities:** Students requesting classroom accommodation must first register with the Dean of Student Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. 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. 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/.