

Fall 2023, BIOL 3680/5680 Syllabus, Plant Pathology (4 credit hours)

Instructor: Dr. Emily G. Cantonwine

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Office hours: WR - 12:30-3:00 or by appointment

Lecture: BC1202, TR - 9:30-10:45

Lab: BC2040, M - 2:00-4:50

Course Description: Study of plant diseases with emphasis on disease etiology, pathogenesis, ecology of host/pathogen interaction, epidemiology, and strategies for disease control.

Learning Outcomes

Plant Pathology Knowledge – At the end of the course, students will be able to...

- Describe the process used to establish disease of a plant.
- Identify pathogen type by cellular/organismal structure.
- Predict pathogen type and ecology based on symptoms and signs of disease.
- Identify and describe disease cycles of plant diseases important to Georgia and the US.
- Relate plant/pathogen interactions to disease development.
- Explain biotic and abiotic factors that influence plant disease epidemics.
- Prescribe disease management strategies based on disease cycle information.
- Collect and interpret data.
- Compile and summarize information from various sources.

Professional Skills – This course will also provide opportunities to improve...

- Microscopy skills, attention to detail, critical thinking

Required Text: Schumann G.L. & D’Arcy, C.J. 2009. Essential Plant Pathology, Second Edition. APS Press, St. Paul, MN, USA.

Recommended Supplemental Text for Graduate Students: G. Agrios, 2005. Plant Pathology, Fifth Edition. Elsevier Academic Press, Cambridge, MA, USA.

Students are required to bring the syllabus, textbook, & lecture notes to each laboratory.

Important information:

- A grade of C or higher is required in this course to count towards a biology degree.
- If you have need for special arrangements to meet the requirements of this course, please contact the Access Office for Students with Disabilities & discuss with me as soon as possible. The Access Office is located in University Center Room 4136 Entrance 5. The phone numbers are 229-245-2498 (V), 229-375-5871. For more information, please visit VSU’s Access Office or email: access@valdosta.edu. To request reasonable accommodations for pregnancy and childbirth, contact Ms. Myia Miller, Title IX Compliance Officer, at maburden@valdosta.edu. Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.

<u>Assessment</u>	<u>#</u>	<u>points each</u>	<u>points total</u>	<u>%</u>	<u>SCALE</u>
Unit Exams*	3	100	300	~44.4%	A > 90%
Final Exam*	1	100	100	~14.8%	B > 80%
Reading Quizzes	5-8	10	50	~7.4%	C > 70%
Lab assignments	5	15	75	~11.1%	D > 60%
Lab Practical	1	100	100	~14.8%	F < 60%
Report*	1	50	50	~7.4%	
Total			675		

* *Assessment differences for BIOL 3680, BIOL 5680 &/or 3680 Honor's Option. See Assessments for details.*

Grade Calculation - Add up your points (minus any extra assignments allowing for dropped grades) and divide by 675 (or possible points if mid-class).

ASSESSMENTS

- Exams: There will be 3 unit exams, each worth 100 points. The format of these exams may include multiple choice, matching, fill-in-the-blank, true/false, and short answer questions. Make-up exams are an option for those with legitimate reasons. FYI, having 3 exams on the same day is not a legitimate reason. *Students wishing to take a makeup exam must contact me the day of the missed exam and must complete the make-up within 24 h of the missed exam, unless there is a legitimate reason otherwise.* Students may only take exams early with a university-related excuse. The Final exam is worth 100 points. 25 points will cover new material & the disease experiment, and 75 points will be over cumulative material. **BIOL 5680** exams may be more challenging than BIOL 3680 exams.
- Reading Quizzes: A selection of APSnet.org disease lessons, or similar, will be assigned throughout the course in which each student must read and answer a set of questions. We will discuss these assignments in class, and this material will be tested on the exams. Five of these reading assignments will be assessed using quizzes to evaluate student preparations for discussions. Each will be worth 10 points. If more than 5 quizzes are given, the lowest quiz scores will be dropped. Quizzes occur at the beginning of class, so do not be late! One make-up quiz will be permitted regardless of excuse. This must be taken during my office hours BEFORE the quiz is returned.
- Lab Assignments: There will be at least 5 assignments in lab, each worth 15 points. If more than 5 lab assignments occur, the lowest score(s) will be dropped.
- Lab Practical: One lab practical will be conducted to evaluate identification skills of symptoms and signs of plant pathogens.
- Report (3680/5680); Journal Article HW/Discussion (5680 and 3680 Honor Option): All students will write a research report for a plant disease experiment conducted in lab. For 3680 students, 10pt will be based on the experimental notebook (group), which should include all notes related to experimental design, set-up, maintenance, data, etc. The remaining 40pt will be the formal research report (individual). Information gathered with the help of Artificial Intelligence, such as ChatGTP, is allowed; however, the AI program(s) and original reference(s) must be cited where appropriate. Each incorrect citation will automatically reduce the report grade by 1 letter. For **Honor's Option 3680** students, the report is worth only 25pt, with the remaining 25pt coming from journal article homework assignments and discussions with the graduate students. There will be four articles discussed. Discussions will occur outside of class time. For **BIOL 5680** students, the plant disease experiment report will be worth only 10pt. The remaining 40pt will come from journal article HW and discussions (20pt) and a 15-20 min presentation on a topic related to plant pathology and the student's thesis work (20pt). BIOL 5680 students must receive at least 70% on each component of this assessment section (experiment report, journal article discussions, and presentation) to pass the course.

- Extra Credit: Extra credit on exams is open to everyone. **However, EC opportunities outside of exams are ONLY available for students who fully participate in the course.** My definition of full participation is as follows:
 - 1) ALL lectures are attended IN FULL either in person (arriving on time to sign in) or by watching the Kaltura Lecture Recording BEFORE the next class period. If you arrive after I begin the lecture, or leave early, you will need to watch that part of the Kaltura recording to receive the attendance mark for the day. There will be a sign-in sheet at the front of the room to indicate your presence.
 - 2) ALL labs are attended IN FULL unless there is a documented excuse that I find acceptable. Excuses must be discussed with me in a timely manner.

GENERAL RULES

- Lecture Attendance: DO NOT COME TO CLASS IF YOU FEEL ILL! Although I highly encourage everyone to attend lectures in-person, there are remote attendance options, and one opportunity to make-up a reading quiz.
- Lab Attendance: DO NOT COME TO LAB IF YOU FEEL ILL! I will work with you to you make up the missed lab, as long as you have a documented excuse.
- Access to the laboratory: The access code is _____. Avoid entering the lab during Dr. Carter's Dendrology class (11-1:50 on Fridays).
- Food and Drink in the Laboratory and Lecture Rooms: Drinks are permitted in lecture, but not food. No food or drink are allowed in the lab.
- Academic Integrity: I follow the Academic Honesty Policies and Procedures of the University and the Policy on Plagiarism composed by the Department of Biology. For more information, refer to www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml and www.valdosta.edu/biology/documents/biologyplagiarism.doc, respectively. "Academic Integrity/Honesty" means performing all academic work without plagiarism, cheating, lying, tampering, stealing, receiving unauthorized or illegitimate assistance from any other person, or using any source of information that is not common knowledge.

Title IX Statement

Valdosta State University (VSU) upholds all applicable laws and policies regarding discrimination on the basis of race, color, sex (including sexual harassment and pregnancy), sexual orientation, gender identity or expression, national origin, religion, age, veteran status, political affiliation, or disability. The University prohibits specific forms of behavior that violate Title IX of the Education Amendments of 1972. Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in education programs and activities that receive federal funding. VSU considers sex discrimination in any form to be a serious offense. Title IX refers to all forms of sex discrimination committed against others, including but not limited to: sexual harassment, sexual assault, sexual misconduct, and sexual violence by other employees, students or third parties and gender inequity or unfair treatment based on an individual's sex/gender. The designated Title IX Coordinator for VSU is Ms. Selenseia Holmes. To view the full policy or to report an incident visit: <https://www.valdosta.edu/administration/student-affairs/title-ix/>

Student Opinion of Instruction

At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators, and they will be able to access results only after they have submitted final grades. Before final grade submission, instructors will not be able to see any responses, but they can see the percentage of students who have or have not completed their SOIs. While instructors will not be able to see student names, an automated system will send a reminder email to those who have yet to complete their SOIs. Complete information about the SOIs, including how to access the survey, is available on the [SOI Procedures webpage \(https://www.valdosta.edu/academics/academic-affairs/sois/\)](https://www.valdosta.edu/academics/academic-affairs/sois/).

Tentative Schedule:

Week	Lecture Topics	Reading Assignments (Chapters)	Lab
Aug 14	Diagnosing Plant Diseases	1	Campus Tour - Lab Assignment I
Aug 21	Fungal Pathogens	2	Signs, Symptoms & Fungal Asexual Structures
Aug 28	Fungal Pathogens	2	Fungal Sexual Structures
Sep 4	Bacterial Pathogens	3	<i>No Lab (Labor Day)</i>
Sep 11	EXAM 1 (Tuesday, Sept 12, Chapters 1-3) Nematode Pathogens	4	Oomycetes & Bacteria
Sep 17	Nematode Pathogens; Viral Pathogens	4, 5 Journal discussion 1 (EGC)	Bacteria, Fungal & Viral Diagnostics – Lab Assignments II & III assigned
Sep 25	Viral Pathogens; Parasitic Plants	5, 6	UGA TIFTON TRIP* Monday 2:00 – 8:00pm (REQUIRED)
Oct 2	Abiotic Factors Experimental design continued	7 Journal discussion 2 (Gideon)	Disease Experimental Design – Lab Assignment IV
Oct 9	<i>Fall Break</i> EXAM 2 (October 12 Chapters 4-7)		<i>No Lab (Fall Break)</i>
Oct 16	Types of Plant Diseases	8 Journal discussion 3 (Emmanuel)	Set-up experiment
Oct 23	Types of Plant Diseases; Plant Pathogen Interactions	8, 9	LAB PRACTICAL
Oct 30	Plant Pathogen Interactions	9 Journal discussion 3 (Emmanuel)	Types of Plant Disease – Lab Assignment V
Nov 6	Plant Pathogen Interactions, Epidemiology	9, 10	Data collection; Introduction and methods due (first draft); Set-up group meeting for data analysis next week!
Nov 13	Epidemiology	10 Journal discussion 4 (Maami Esi)	Data analysis Discussion of intro & methods; first draft of results due; data analysis & results questions answered
Nov 20	EXAM 3 (Nov 20, Chapters 8-10) Disease Management (Tuesday) THANKSGIVING (Thursday)	11	EXAM 3 <u>in lab</u>
Nov 27	Disease management Graduate Student Presentations	11	Disease experiment notebook and report due
Final	FINAL EXAM - Thursday 8:00-10:00am Chapters 1-11, Disease Cycle Interpretation & lab experiment-related questions		