

Stories of Plant Disease

11:776:105 (3 credits)

Spring Semester (yearly)

Monday, Thursday (lecture) 12:15 – 1:55 PM 101 Food Science

CONTACT INFORMATION

Instructor: Dr. Ann B. Gould
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Office Hours: by arrangement

COURSE DESCRIPTION

Stories of Plant Disease is an introductory class where the impact of plant diseases on human history and culture is examined. Stories of plant disease epidemics, past and present, are used to illustrate the vulnerability of plants we use for food, fiber, oil, and green space, and the human and environmental costs of plant disease. Current, complex topics such as pesticide use, genetic engineering, and climate change, dependency on subsistence agriculture, bioterrorism, and global spread of plant pathogens are examined, encouraging students to apply critical thinking. Concepts woven throughout the course include the study of organisms that cause diseases in plants, how these organisms cause disease and how plants defend themselves, and how diseases spread, are prevented, and managed. The course is open to students interested in science, gardening, agriculture, the environment, food, or sustainability. Students completing the course will have a better understanding of the connection between plant diseases and our food supply and the role agriculture plays in our everyday lives.

COURSE WEBSITE, RESOURCES AND MATERIALS

- Course website: Canvas
- Required textbook: Schumann, GL, and D'Arcy, CJ. 2012. *Hungry Planet: Stories of Plant Diseases*. APS Press, St. Paul, MN. Available hardcopy and in Kindle edition
- Hungry Planet: Student Resources:
<http://www.apsnet.org/edcenter/intropp/HungryPlanet/Pages/default.aspx>
- Two textbooks and supplemental reading materials will be placed on reserve at Chang Library, Cook Campus, as needed

PREREQUISITE

None

COURSE LEARNING GOALS

(Link to Plant Biology Undergraduate Program Goals: <http://plantbiology.rutgers.edu/undergrad/plantbiology/>)

By the end of this course, the student will be able to:

1. Recognize the major groups of pathogens that affect plants (addresses program goal 1)
2. Demonstrate an understanding of mechanisms, terms, and concepts that govern the plant-plant pathogen relationship (addresses program goal 1)
3. Discuss methods used to manage plant diseases (addresses program goal 4)
4. Recognize and the socioeconomic, cultural, and political impacts of plant diseases (addresses program goals 2 and 3)

ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT

Grading: Grades will be determined based on examinations (two in-class exams and one final), weekly quizzes (on-line), homework (on-line), attendance, and two short writing assignments.

Course points: 550

- Exam I: 25% (100 pts)
- Exam II: 25% (100 pts)
- Final exam (semi-comprehensive): 30% (125 pts)
- On-line quizzes 5% (150 pts weighted to 5% of grade) (weekly)
- Homework and attendance: 5% (25 pts)
- Writing assignments (two, 2+-page treatments of current, controversial topics with references): 10% (50 pts)
- Scale: 90-100% = A; 80-89 = B; 70-79 = C; 60-69 = D

Quizzes are administered online. Examinations and quizzes are composed of true-false, multiple choice, fill-in-the-blank, matching, compare-and-contrast, short answer, and essay.

Writing Assignments: Two writing efforts (10% of the final grade), comprised of 2-page treatments of current controversial topics with references, are required. Writing assignments will be evaluated on construction of argument, textual support, and accuracy of information, grammatical quality, and clarity. Proper citation of source materials is required; plagiarism will not be tolerated. The Turnitin tool will be used to help evaluate student effort.

Learning goals assessment: Specific questions on exams, quizzes, and writing assignments will be used to assess student knowledge of course learning goals. In particular, demonstrated knowledge of terms, concepts, and management of plant disease (course learning goals 1 to 3) will be assessed by specific questions, including essay questions, on mid-term and final examinations. Students will communicate a thorough grasp of the socioeconomic, cultural, and political impacts of plant disease (course learning goal 4) in writing efforts and comprehensive essay question on the final exam. The percentage score on these assessments will determine the level of mastery: >90% outstanding; 80-89% good; 70-79% satisfactory; <69% unsatisfactory.

PARTICIPATION GRADE AND ABSENCE POLICY

Attendance is mandatory; as a courtesy, students unable to attend may contact the instructor via e-mail prior to the missed class or may use the University absence reporting website (<https://sims.rutgers.edu/ssra/>) to indicate the date and reason for the absence. An e-mail is automatically sent to the instructor.

CLASS WEBSITE

The Canvas platform will be used to support class activities. Lectures, supporting documentation, and assignments will be posted, and grades will be posted online so that students can monitor their progress in the class.

LECTURE NOTES

Outlines for most lectures will be made available on the Canvas class website 24 hours prior to lecture. Students are encouraged to bring these lecture notes to class. Unit lectures in their entirety will be made available for student viewing after they are presented in class.

COURSE SCHEDULE

Week	Book Chapter	Topics
1	1	Hungry humans: our relationship to our food
2	1	Famine and plant disease (The Great Famine – an Gorta Mór)
3	2	Fungi as plant pathogens (The Bengal Famine)
4	3	Monocultures (coffee rust)
5	3	Regulatory aspects of plant disease (citrus canker)
		Exam I
6	4	Healthy plants, plant disease defense
		Assignment 1 due
7	4	Impact of the environment on plant health
8	5	Bacteria
		Spring recess
9	6	People improving plants (What Mary Dell Chilton Saw)
10	7	Epidemiology: roles people play in plant disease epidemics (southern corn leaf blight)
		Exam II
11	8	Disease management and pesticides
12	9	The plant “underworld” (soybean cyst nematode)
		Assignment 2 due
13	10, 11	Fungi in food from antiquity (St. Anthony’s Fire) Rusts (stem rust of wheat)
14	12	Diseases of the big (mistletoe)
	13	Diseases caused by the small (plant viruses) (Tulip Mania)
	14	How to feed a hungry planet
Final exam (semi-comprehensive, date to be determined)		

FINAL EXAM DATE AND TIME

The final exam is “semi-comprehensive” and constitutes 30% of the total grade. About 80% of the exam will cover (in detail) material presented in the final one-third of the class; the remaining, more comprehensive questions will be broader in scope.

The Online Final exam Schedule: <http://finalexams.rutgers.edu/>

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>. Full policies and procedures are at <https://ods.rutgers.edu/>

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/academic-integrity-policy/>

The principles of academic integrity require that a student:

- Properly acknowledge and cite all use of the ideas, results, or words of others.
- Properly acknowledge all contributors to a given piece of work.

- Make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- Uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that:

- Everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- All student work is fairly evaluated and no student has an inappropriate advantage over others.
- The academic and ethical development of all students is fostered.
- The reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

STUDENT WELLNESS SERVICES

Just In Case Web App <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.