

General Plant Pathology

11:776:302 (3 credits)
Fall Semester (yearly)

CONTACT INFORMATION

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

COURSE DESCRIPTION

General Plant Pathology is an introductory class where the nature of plant disease and its management are discussed. Topics examined in this course include the organisms and environmental conditions that cause disease in plants, the mechanisms by which these factors induce disease, the interactions between disease agents and their hosts, disease spread, prevention, and management, and the human and environmental costs of plant diseases.

COURSE WEBSITE, RESOURCES AND MATERIALS

- Course website: Canvas
- Required textbook: G. L. Schumann and C. J. D'Arcy. Essential Plant Pathology. APS Press, St. Paul, MN. Textbook and accompanying CD. Both 2006 and 2009 editions of this text may be used. If you buy the textbook used, ensure that there is a CD included on the back flap of the text.
- Various supplemental materials will be on reserve at Chang Library, including several copies of the textbook and accompanying CD.

PREREQUISITE

01:119:115 General Biology OR 01:119:103 Principles of Biology

The companion, 1-credit laboratory course, 11:770:311, is not required, but a fuller understanding of the discipline is experienced by students who enroll.

COURSE LEARNING GOALS ([link to Plant Biology Undergraduate Program Goals:](http://plantbiology.rutgers.edu/undergrad/plantbiology/) (<http://plantbiology.rutgers.edu/undergrad/plantbiology/>)

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

1. Recognize the major groups of organisms that cause diseases in plants (addresses program goal 1)
2. Demonstrate familiarity with the mechanisms plant pathogenic organisms use to cause plant disease (addresses program goal 1)
3. Discuss methods for plant disease management and diagnosis (addresses program goals 1 to 4)

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 one written assignment (term paper).

- Exam I: 25%
- Exam II: 25%
- Final exam (semi-comprehensive): 30%
- Pop and scheduled on-line quizzes, homework, attendance: 10%
- Writing assignment: 10%
- 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. Completion of one homework assignment will be required for most units. A writing effort (term paper) is required from each student by Week 12. This written report is 10% of the final grade. The final exam is “semi-comprehensive”: about 70% 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. Students may monitor their grades (as a percent of possible points) on the Canvas website.

Learning goals assessment: Specific questions on exams and quizzes will be used to assess student knowledge of all course learning goals. In the term paper, students will demonstrate mastery of plant disease symptoms, signs, progression, and management (learning goals 2 and 3). A specific interpretive question on the cumulative final exam will be used to assess student ability to synthesize information to diagnose a disease scenario (learning goal 3). The percentage score on these assessments will determine the level of mastery: >90% outstanding; 80-89% good; 70-70% satisfactory; <69% unsatisfactory.

PARTICIPATION GRADE AND ABSENCE POLICY

Attendance is mandatory. A sign-in sheet will be provided at the rear of the classroom before and during class. Courtesy demands that 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

| Schedule | Book Chapter | Topics |
|----------|--------------|--|
| Week 1 | 1 | What's wrong with my plant? |
| Week 2 | 1 | History: the birth of plant pathology |
| Week 3 | 2 | Fungi as plant pathogens |
| Week 4 | 2 | Fungal-like organisms |
| Week 5 | 2 | True fungi |
| Week 6 | 3 | Bacteria |
| | | Exam I |
| Week 7 | 4 | Nematodes |
| | 5 | Plant pathogenic viruses (guest lecture) |
| Week 8 | 6 | Plant pathogenic angiosperms |
| | 7 | Noninfectious plant diseases |
| Week 9 | 9 | Disease development |
| Week 10 | 10 | Epidemiology |
| | | Exam II |
| Week 11 | 11 | Disease management |
| Week 12 | Appendix 3 | Diagnostics |
| | | Thanksgiving recess |
| Week 13 | 2 | Rusts and smuts |
| | 8 | Diseases of aerial plant parts |
| Week 14 | 8 | Soilborne diseases |
| | 8 | Vascular diseases |
| Week 15 | 8 | Wood decay and post-harvest diseases |
| | | Course review |

Final Exam: Date to be determined

FINAL EXAM/PAPER DATE AND TIME

The final exam is "semi-comprehensive." About 70% 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/>

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.