

Weeds, Diseases, and Insects of Plants

11:776:391 (3 credits)
Spring Semester (yearly)

CONTACT INFORMATION

Course Coordinator:	Dr. Andy Wyenandt
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COURSE DESCRIPTION

The objective of this course is to familiarize students with common weed, disease, and insect problems that occur during the production and maintenance of plants in settings such as in production fields, greenhouses and nurseries, residential properties, parks and recreational areas, and forested sites. Students will gain a basic understanding of the biology and ecology of these pests and the management of biotic and abiotic problems within a plant health care or integrated pest management context. In each class, several weeds, diseases, or insect pests will be profiled.

This course is designed for students interested in careers in applied plant management in urban landscapes, greenhouse, nursery, and field production systems, and recreational green spaces such as parks and golf courses. This is an excellent course for those interested in plant biosecurity. Students interested in the plant sciences, entomology, and landscape architecture should consider taking this course to strengthen their background in pest recognition.

COURSE WEBSITE, RESOURCES AND MATERIALS

- Course website: Canvas
- Required textbook: not required, but the following reference materials will be heavily utilized:
Sinclair, W, and H Lyon. 2005. Diseases of Trees and Shrubs, 2nd. Comstock/Cornell University Press
Johnson, W, and H Lyon. 1994. Insects that Feed on Trees and Shrubs, 2nd, revised. Comstock/Cornell University Press
Davidson, J, and M Raupp. 2010. Managing Insects and Mites on Woody Plants: an IPM Approach, 2nd. Tree Care Industry Assn.
- These references as well as various supplemental materials will be on reserve at Chang Library.

PREREQUISITE

General Plant Pathology 11:776:302 or Insect Biology 11:370:381 or equivalents are required. Additional coursework in entomology, plant pathology, and the plant sciences is helpful.

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 organisms (weeds, plant pathogens, and insects) that affect plants in production and in New Jersey landscapes (addresses program goal 1)
2. Demonstrate familiarity with the mechanisms these organisms use to cause plant disease or injury (addresses program goal 1)
3. Discuss methods for plant disease, weed, and insect management (addresses program goal 3)
4. Describe methods for plant disease, weed, and insect diagnosis (addresses program goal 3)

ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT

Grading: Grades will be determined based on examinations (three in-class exams), weekly quizzes (on-line), homework (on-line), attendance, and one written assignment (term paper).

- Exam I (diseases): 25%
- Exam II (weeds): 25%
- Exam III (insects): 25%
- Quizzes (online or in-class), assignments: 10%
- Writing assignment: 15%
- 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 several homework assignments, including NPDN First Responder Training, is expected. A writing effort (term paper) is required from each student by Week 13. This written report is 15% of the final grade. 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 symptoms, signs, progression, and management of plant disease, weed, or insect issues (course learning goals 1, 3 and 4). A specific interpretive question on all exams will be used to assess student ability to synthesize information to diagnose a disease, weed, or insect scenario (course learning goal 4). 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

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

Week	Topics
Introduction to IPM and Pest Management	
1	Pest control, and principles of integrated pest management (IPM)
2	Pesticides: utility, application, mode of action, and alternatives
Diseases	
3	Diseases of plants in the urban setting
4	Diseases of ornamentals in production (field and container nurseries, greenhouse)
5	Diseases of vegetable crops
	Exam I
6	Diseases of small fruit
7	Diseases of tree fruit
Weeds	
8	Significance and identification of weeds
9	Weed management in fruit and vegetable crops
10	Weed management in turfgrass and the landscape
	Exam II
Insects	
11	Insect scouting, monitoring techniques, and insecticides
12	Borers
13	Sucking pests
	Term paper due
14	Defoliators
Final exam (Exam III, not cumulative, date to be determined)	

FINAL EXAM/PAPER DATE AND TIME

The final exam is not cumulative and covers the remaining third of the course (plant insects).

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.