ENY 6934: Insect Vectors of Plant Pathogens

Instructor:
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Office hours: By appointment. Please arrange by e-mail.

This one-credit seminar course is for graduate students and advanced undergraduates interested in insect vector-plant pathogen relationships, insect-pathogen-plant interactions, and integrated pest management. Topics can range from very basic to very applied depending on the interests of the participants and may include mite and nematode vectors as well as insect vectors.

Goals:

- Provide practical experience in researching an unfamiliar topic and effectively teaching the material to the other students in the class through a seminar or lecture followed by a discussion.

- Provide information and background on insect vectors of plant pathogens and the pathogens they vector.

Approach:

There will be several introductory lectures to provide an overview of the subject. After this, each student will choose a topic from the list provided and prepare and present one 35 to 40-minute seminar/lecture and 5 to 10-minute discussion. Students may use PowerPoint and demonstration materials during their presentations. They should assign reading the week before their presentation to enhance class discussion. It would be best if these readings were available online or sent to the class as PDFs. We could also put them in the Entomology & Nematology Dept. reading room.

Depending on the number of students in the class, we may have several weeks of discussion of current papers near the end of the semester.

Textbook:

No textbook is required (no good one exists!). However, everyone will be expected to read Chapter 11, pp. 485-522 in Matthews’ Plant Virology, 4th edition (2002), Academic Press by Roger Hull, which will be made available in the departmental reading room.
Seminar topics and content:
Topics: the seminars should be case studies that address the following points:

- Briefly describe the pathogen that is being transmitted and the disease it causes.
- Historical aspects—when was an insect vector identified and how was its role discovered? More than one vector species?
- What has been learned about the mechanism of transmission? Specificity? Any other basic biology that is relevant?
- Describe the ecological aspects of the system—population dynamics, host plants, environmental effects, for example.
- Describe the management of the disease.

Depending on the system, you may want to stress some points more than others. For example, there are excellent stories about mechanisms for Cauliflower mosaic virus/aphids, Potyviruses/aphids, Barley yellow dwarf/aphids, Tomato spotted wilt virus/thrips, and Pierce’s disease/sharphooters. In other cases, there will be more information about the ecology of the system. And for a few, the discovery process may be the most interesting part of the story.

Photos from online extension publications are fine, as are management recommendations, but please do not rely on extension articles for basic information—find the original research. Don’t base your entire presentation on one review paper (or website!).

Topics to choose from: (will consider other disease/vector systems if you can make a good case for them)
- Pierce’s disease of grapevine (sharphooters)
- Aster yellows (leafhopper)
- Barley yellow dwarf virus (aphids)
- Cauliflower mosaic virus (aphids)
- Cucumber mosaic virus (aphids)
- Papaya ringspot virus (or other aphid-transmitted potyvirus)
- Citrus greening (HLB) (Asian citrus psyllid)
- Tomato yellow leaf curl virus (silverleaf or sweetpotato whitefly)
- Dutch Elm Disease (beetle/fungus)
- Bean pod mottle virus or beetle-transmitted viruses in general
- Stewart’s wilt of corn or bacterial wilt of cucurbits (bacteria/beetle)
- Yellow vine disease of cucurbits (bacteria/squash bug)

Note: within these systems, you can choose to emphasize a particular aspect such as vector behavior, epidemiology as it relates to the vector, or molecular or cellular interactions of virus and vector.

Grades will be based on quality of presentation (as determined by the instructor), peer evaluation of the presentation, and participation in discussions and attendance (instructor evaluation of presentation, 44 points; peer evaluation, 20 points; participation in discussions, 24 points; attendance, 12 points).

Grading scale:
A = 93 - 100
A- = 90 - 92.9
B+ = 87 - 89.9
B = 83 - 86.9
B- = 80 - 82.9
C+ = 77 - 79.9
C = 73 - 76.9
C- = 70 - 72.9
D+ = 67 - 69.9
D = 63 - 66.9
D- = 60 - 62.9
E = <60

Student Name: 

Score (1 is poor, 3 is average, 5 is excellent)

Presentation style
- Poise, posture, eye contact
- Verbal (intonation, variety, clarity)
- Non-verbal (gestures, movement, facial expression)
- Ability to create interest and enthusiasm

Comments:

Visual aids
- Enhance presentation, not distracting
- Quality of photos and drawings
- Design quality (color, font choice, use of space)
- Handouts (Notes pages, bibliography, additional info, etc.)

Comments:

Preparation
- Organization (coherent pattern)
- Clear explanations and examples
- Density of information (overload versus no substance)
- Strong intro and ending
- Ability to answer questions
- Timing (within 2 or 3 minutes of goal)

Comments:

Discussion
Comments:

Overall evaluation
Comments:
**Policy Related to Class Attendance**: Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first class meeting. In general, acceptable reasons for absence from class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved. See [https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) for more details.

**Class Demeanor Expected by Instructor**: Please be considerate of your classmates by giving them your full attention during presentations. Please arrive on time and do not leave early. Turn off cell phones and beepers before coming into classroom. UF rules prohibit your having food or drinks in classrooms. Use of tobacco products (in any form) in the classroom is prohibited.

**Additional General Information**: The following information applies to all courses at the University of Florida.

**Grades and Grade Points**
For information on current UF policies for assigning grade points, see [https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx)

**Academic Honesty**
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: [http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php](http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php).

**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.
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, www.counseling.ufl.edu/cwc/

Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Training Programs
Community Provider Database

Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities
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. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/