SPRING 2014
Principles of Plant Pest Risk
Assessment and Management
ALS 6942 Course Syllabus

Instructors

Todd Dutton
USDA APHIS PPQ Professional Development Center (PDC)
Office: 69 Thomas Johnson Dr., Frederick, MD 21702
Phone: (240) 529-0272
Fax: (240) 529-0347
Todd.Dutton@aphis.usda.gov
Office Hours: By Appointment

UF Contact

Dr. Amanda Hodges
Associate Extension Scientist
Director, Doctor of Plant Medicine Program
Department of Entomology and Nematology
Steinmetz Building
970 Natural Area Drive, Office 3212
Phone: (352) 273-3957
Fax: (352) 392-0190
Email: achodges@ufl.edu

Office Hours:
Tuesday and Thursday 8:30am-9:30am or by appointment.
SPRING 2014

Class Coordinator
Kirsha Rhymer
USDA APHIS PPQ Professional Development Center (PDC)
Office: 69 Thomas Johnson Dr., Frederick, MD 21702
Phone: (240) 529-0257
Blackberry (240)586-0742
Fax: (240) 529-0347
Kirsha.Rhymer@aphis.usda.gov
Office Hours: By Appointment

Assistant at PDC in Frederick, MD
Loretta Fields
USDA APHIS PPQ Professional Development Center (PDC)
Office: 69 Thomas Johnson Dr., Frederick, MD 21702
Phone: (240) 529-0245
Fax: (240) 529-0347
Loretta.H.Fields@aphis.usda.gov

Information Technology contact during classes
Paul Majewski
USDA APHIS PPQ Professional Development Center (PDC)
Office: 69 Thomas Johnson Dr., Frederick, MD 21702
Blackberry: (240)372-1830
or Kirsha Rhymer (240)586-0742
**Lecture Schedule:** Tuesday / Thursday, 3:00pm – 4:15pm EST. Start times for guest lecturers are provided (Eastern Standard Time). Lecturers will present for approximately one hour. Lecture will occur in EYN (Steinmetz Hall) 1027 during period 9.

**Textbooks and References:** A textbook is not required. Required readings and lecture materials will be distributed in class. Lectures and required readings will complement one another. Class exercises will provide hands-on experience.

**Purpose:** The purpose of this course is to provide students with theoretical and applied training in the regulatory aspects of plant protection using real-world case studies, scenarios, and issues.
Course Objectives

Upon successful completion of this course, students will be able to:

1. Describe the mission, structure, and function of National Plant Protection Organizations (NPPOs)
2. Describe the mission of other related Regional, Federal, and State Agencies and Laboratories involved in regulatory plant science
3. Understand and describe the role of scientific disciplines such as plant pathology, entomology, weed science, botany, ecology, and molecular biology in relation to the regulatory process
4. Describe the relevant legal and regulatory instruments for plant protection at the international and national levels, and discuss how these support the mission of the NPPO for the U.S. – USDA APHIS PPQ
5. Describe the role of USDA APHIS PPQ in promoting safe trade in agricultural products and in protecting agricultural resources and the environment
6. Understand and describe:
   a. Traditional and novel methods of pest surveillance, detection and identification
   b. The objectives and application of pest risk analysis
   c. The relationship between risk assessment, risk management, and risk communication
   d. The technologies and tools available for containment, eradication, and management of exotic plant pests
   e. The safeguarding continuum
   f. The application of novel tools for field and laboratory diagnostics
   g. The mitigation measures routinely used to reduce pest risk
7. Recognize the various job opportunities available in USDA APHIS PPQ and in State Agricultural Agencies, how to find out about them and identify ways to prepare and be competitive for such positions
Grading Policy:

**GRADING POLICY**

<table>
<thead>
<tr>
<th>EVALUATION*</th>
<th>Final Grading</th>
<th>Scale: Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments (9 assignments, 5 points each)</td>
<td>45*</td>
<td></td>
</tr>
<tr>
<td>Written Assignment 1, First Draft</td>
<td>10</td>
<td>A</td>
</tr>
<tr>
<td>Written Assignment 1, Final Draft</td>
<td>25</td>
<td>93-100</td>
</tr>
<tr>
<td>Written Assignment 2</td>
<td>25</td>
<td>A-</td>
</tr>
<tr>
<td>Class Participation</td>
<td>15</td>
<td>90-92</td>
</tr>
<tr>
<td>Course Evaluation Completion</td>
<td>5</td>
<td>B+</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25*</td>
<td>87-89</td>
</tr>
</tbody>
</table>

Total ALS 6942  150 points

*Grades with an (*) will be administered by USDA-APHIS-PPQ. Overall course grades will be administered by the University of Florida contact, Dr. Amanda Hodges (achodges@ufl.edu).

**INCOMPLETE GRADES**
The application process for receiving an incomplete grade is the responsibility of the student. Students may download the CALS incomplete grade form at: [http://www.cals.ufl.edu/faculty-staff/docs/forms/incompleteGradeContract.pdf](http://www.cals.ufl.edu/faculty-staff/docs/forms/incompleteGradeContract.pdf) The instructor must sign the application for an incomplete grade, but the student must initiate the paperwork process. The instructor will only approve an incomplete grade application if the following conditions are met:

- The student has completed a major portion of the course with a passing grade (“D” or better).
- The student is unable to complete course requirements because of documented circumstances beyond his or her control.
- The student and instructor have discussed the situation prior to the final exam (except under emergency conditions).
- The instructor will submit a final grade for the student on the date due (indicated below) whether or not all work is completed.

Note that the paperwork for receiving an incomplete will also include deadlines for remaining assignments due. The instructor will not consider incomplete requests after the last day of classes.

**EXTRA CREDIT:** No Extra Credit will be awarded.

**Activity Assignments**
Nine activity assignments worth 5 points each will be assigned by the USDA-APHIS-PPQ instructors. More information regarding activity assignments will be provided during the course orientation. Some of the course content will be located in the USDA-APHIS-PPQ learning portal instead of in UF Sakai [https://lss.at.ufl.edu/](https://lss.at.ufl.edu/). However, UF Sakai will provide announcements, cross-postings, and reminders concerning your due assignments. Your final grade will be posted in Sakai prior to its posting in ISIS and your written assignments must be submitted to Sakai. Grades posted in the USDA-APHIS-PPQ portal will be cross posted in Sakai in order for you to view your distribution of points throughout the semester.
You will need high-speed internet to access the e-learning modules. You will need to install Adobe® Flash Player http://get.adobe.com/flashplayer/ on your computer to view the e-learning content.

**Class Participation**
Class participation is worth 15 points. If possible, please arrive at 2:50pm on days with guest lecturers.

**Classroom Students** (Gainesville Campus)
Students will receive a ½ point deduction for every missed class, unless an appropriate excuse is presented. Documentation of a medical reason or death in the family is an example of an excused absence. Each student is allowed two unexcused absences without a point deduction.

**Distance Education Students**
Distance education students will complete class participation through discussion posts within UF e-learning (https://lss.at.ufl.edu/).

**Written Assignments**
All students will complete two written assignments, worth 25 points each. Each written assignment will be five pages in length, double spaced, and 12 point Times New Roman Font. Written assignments must include at least 5 primary literature sources outside of provided classroom materials. Written assignments will require that you can assimilate lecture and reading content from the course, and search for your own references. Written assignments will be graded on the following criteria:

1) Appropriate and accurate references utilized
2) Requested topic addressed
3) Grammatical accuracy
4) Logical organization of content
5) Use of requested font, margins, and length requirements for the written assignment.

Written assignments are due by 5pm on the due date. Written assignments will be checked for plagiarism with Turnitin software (https://lss.at.ufl.edu/help/Turnitin). Plagiarism will result in a grade of ‘0’ for the assignment. A grading rubric is also available for each assignment. Submission of your written assignment 1 first draft will assist you in the successful completion of both written assignments. The Entomological Society of America reference style will be used for your citations (http://www.entsoc.org/pubs/publish/style/#References_Cited).

**MISSED EXAMS**
Make-up exams will only be allowed due to clearly documented medical excuses or a death in your immediate family (spouse, sibling, parent, child, or grandparent). You will need to provide the instructor with clear documentation, and contact details to verify the excuse. Make-up exams will not be identical to either the classroom exam or the distance education exam. It is the responsibility of the student to contact the instructor no later than three days following the missed exam. Students failing to contact the instructor by three days following a scheduled exam will be assigned a numerical grade of ‘O’ for the missed exam.

**E-MAIL/GATORLINK ACCOUNT REQUIREMENTS**
You will be required to get a Gatorlink computer account through the university. This service is free to all students. Using this account, you will be able to send and receive e-mail and access the World Wide Web
You must correspond through this e-mail account.

POLICY STATEMENTS: ACADEMIC HONESTY, PLAGIARISM, SOFTWARE USE, UF COUNSELING SERVICES, SERVICES FOR STUDENTS WITH DISABILITIES

In 1995, the UF student body enacted a new honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by the students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of this honor code.

The Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the university, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The University requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean or Student Honor Court.

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. This policy will be vigorously upheld at all times in this course.

PLAGIARISM INFORMATION FROM THE ENTOMOLOGY AND NEMATOLOGY DEPARTMENT

Plagiarism is a serious problem in academia today, especially with the ease of obtaining information from the World Wide Web. Plagiarism is defined as representing the words or ideas of another person as one’s own, without attribution to the source. All words and ideas must be attributed to a source unless they are considered common knowledge (i.e., widely known by many people and found in many different sources). There are many kinds of plagiarism, as you will read on the Guide to Plagiarism website.
Plagiarism is unethical, unacceptable in science, and prohibited by the UF Student Honor Code (http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php). The consequences for plagiarism while at the University of Florida range from receiving a grade of zero for the plagiarized assignment or a failing grade for the course, to, for repeated offenses, expulsion from the university. Plagiarism after graduate training calls into question one’s scientific integrity and can lead to banning of publication in journals and the loss of jobs/careers.

In some countries, it is an acceptable practice to write in a manner that faculty members at the University of Florida consider to be plagiarism. Students studying in our university and with plans to publish their research in the English language need to know what plagiarism is and how to avoid it.

Students who plagiarize will be caught and consequences will be applied. Many faculty in our department check all written assignments using an anti-plagiarism software called Turnitin®. You may wish to customize this section and put in your plans to use Turnitin and your consequences for plagiarism.

For further information and examples of plagiarism, I strongly suggest that you please read the George Smathers’ Library Guide to Plagiarism at http://www.counseling.ufl.edu/cwc/Default.aspx

Please understand that our purpose in bringing to your attention the matter of plagiarism is to help train you to be ethical scientists, not to impugn your character.

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 crisis or personal problems that interfere with their general wellbeing are encouraged to utilize the university’s counseling resources. Both the Counseling Center and Student Mental Health provide confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal or lacking clear career and academic goals, which interfere with their academic performance. The Counseling Center is located at 301 Peabody Hall (next to Criser Hall). Student Mental Health is located on the second floor of the Student Health Services in the Infirmary.

1. University Counseling Center, 301 Peabody Hall, 392-1575; personal and career counseling: http://www.counseling.ufl.edu/cwc/Default.aspx
2. Student Mental Health, Rm. 245 Student Health Care Center, 392-1171, personal counseling: http://shcc.ufl.edu/
   - Alcohol and Substance Abuse Program (ASAP)
   - Center for Sexual Assault/Abuse Recovery & Education (CARE)
   - Eating Disorders Program
   - Employee Assistance Program
   - Suicide Prevention Program
3. Career Resource Center, DR-100 J.W.Reitz Union, 392-1602, career development assistance and counseling.

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. 0001 Reid Hall, 392-8565, www.dso.ufl.edu/drc/
<table>
<thead>
<tr>
<th>Unit #</th>
<th>Date</th>
<th>Topic</th>
<th>Required Readings/Additional</th>
</tr>
</thead>
</table>
| 1     | January 7, 2014 | Introduction, course format, expectations, grading policy, virtual classroom, America’s agriculture – what’s there to protect? Definitions and acronyms U.S. Department of Agriculture – structure and function The Global Village – the Importance of Agricultural Trade | Lecturer – Todd Dutton  
Time: 3:00 – 4:15 ET  
| 2     | January 9, 2014 | Invasive Species and Quarantine Pests  
National and Regional Plant Protection Organizations  
The role of science in Regulatory Plant Protection  
The plant health safeguarding spectrum | Lecturer – Todd Dutton  
Time: 3:00 – 4:15 ET  
Assignment 1 – Acronym “Bingo” |
| 3 | January 14, 2014 | - National and Regional Plant Protection Organizations – duties and responsibilities  
- State Departments of Agriculture | Guest Lecturer – Dr. Betsy Randall-Schadel  
**Time:** 3:00 – 4:15 ET  
**Assignment 2:** Science in Plant Protection |
|---|---|---|---|
**Time:** 3:00 – 4:15 ET  
**Readings:**  
The WTO SPS Agreement – what you need to know.  
Devorshak, C. 2008. Regulatory Entomology |
| 5 | January 21, 2014 | - Introduction to Risk Analysis  
  o About Risk  
  o Risk Analysis methods  
  o Who does Risk Analysis  
  o Why do Risk Analysis  
- The Risk Assessment toolbox | Guest Lecturer – Alison Neeley  
**Time:** 3:00 – 4:15 ET  
**Readings:**  
ISPM 2 – 2007 – Framework for Pest Risk Analysis  
ISPM 11 – 2005 – Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms.  
**Written Assignment 1:** First Draft |
<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Topic</th>
<th>Lecturer/Lecture Time</th>
<th>Readings/Assignments</th>
</tr>
</thead>
</table>
| 6 | January 23, 2014 | Risk Assessment for Plant Protection  
  - Pest-specific  
  - Pathway  
  - Specialized risk assessments | Guest Lecturer – Alison Neeley  
  Time: 3:00 – 4:15 ET  
  Readings:  
  Useful resources to conduct PRA  
  Templates for doing PRA – APHIS-PPQ 5.02  
  Assignment 3: Risk of Street Crossings | |
| 7 | January 28, 2014 | Risk Assessment for Plant Protection  
  - Pest-specific  
  - Pathway  
  - Specialized risk assessments | Guest Lecturer – Alison Neeley  
  Time: 3:00 – 4:15 ET  
  Assignment 4: Pest/Pathway PRA | |
| 8 | January 30, 2014 | Assignments and Papers discussion | Lecturer – Todd Dutton  
  Time: 3:00 – 4:15 ET | |
<table>
<thead>
<tr>
<th>Date</th>
<th>Date of the Event</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Time</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>o Basic Concepts</td>
<td>Charles Pierre</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Phytosanitary Treatments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 February</td>
<td>February 6, 2014</td>
<td>Risk Management</td>
<td>Guest Lecturer –</td>
<td>3:00 – 4:15 ET</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Systems approaches</td>
<td>Charles Pierre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 February</td>
<td>February 11, 2014</td>
<td>Risk Communication</td>
<td>Lecturer –</td>
<td>3:00 – 4:15 ET</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Basic concepts</td>
<td>Todd Dutton</td>
<td></td>
<td>Assignment 5: Risk Communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Case studies</td>
<td></td>
<td></td>
<td>Discuss and Begin Class Project</td>
</tr>
</tbody>
</table>
### Principles of Plant Pest Risk Assessment and Management

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Lecturer/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>February 13, 2014</td>
<td>Risk Communication</td>
<td>Lecturer – Todd Dutton Time: 3:00 – 4:15 ET Assignment 6: Risk Communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Basic concepts</td>
<td>Discuss and Begin Class Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Case studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>February 18, 2014</td>
<td>Risk Management</td>
<td>Guest Lecturer – Charles Pierre Time: 3:00 – 4:15 ET Assignment 7: Systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Systems approaches</td>
<td>Approach Assignment</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Lecturer</td>
<td>Details</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>February 20, 2014&lt;br&gt;· Risk Communication&lt;br&gt;  o Basic concepts&lt;br&gt;  o Case studies&lt;br&gt;</td>
<td>Lecturer – Todd Dutton</td>
<td>Time: 3:00 – 4:15 ET&lt;br&gt;Assignment 8: Risk Communication&lt;br&gt;Discuss and Begin Class Project</td>
</tr>
<tr>
<td>12</td>
<td>February 25, 2014&lt;br&gt;· Biosurveillance, Intelligence and Information</td>
<td>Lecturer – Todd Dutton</td>
<td>Time: 3:00 – 4:15 ET&lt;br&gt;Prepare for beans exercise (pre-work for Mar. 1 lecture)</td>
</tr>
<tr>
<td>13</td>
<td>February 27, 2014&lt;br&gt;· Pre-Clearance Programs&lt;br&gt;</td>
<td>Guest Lecturer – Dr. Betsy Randall-Schadel</td>
<td>Time: 3:00 – 4:15 ET&lt;br&gt;Written Assignment 1: Final Draft</td>
</tr>
<tr>
<td></td>
<td><strong>SPRING BREAK : MARCH 1-8</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>March 11, 2014&lt;br&gt;· Port Activities and Inspection</td>
<td>Guest Lecturer – Dr. Rob Ahern</td>
<td>Time: 3:00 – 4:15 ET&lt;br&gt;Assignment 9: Beans inspection exercise</td>
</tr>
<tr>
<td>16</td>
<td>March 18, 2014&lt;br&gt;· Pest mgmt. case studies – Arthropods (emphasize survey, detection, and identification of arthropod used in case study)</td>
<td>Lecturer – Todd Dutton</td>
<td>Time: 3:00 – 4:15 ET</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Lecturer</td>
<td>Time</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>March 20, 2014</td>
<td>Pest mgmt. case studies – <strong>Plant Pathogens</strong> (emphasize survey, detection, and identification of pathogen used in case study)</td>
<td><strong>Guest Lecturer – Dr. Barbara Schading</strong></td>
<td>3:00 – 4:15 ET</td>
</tr>
<tr>
<td>March 25, 2014</td>
<td>Pest management case studies – <strong>Nematodes</strong> (emphasize, survey, detection, and identification used in case study)</td>
<td><strong>Guest Lecturer – Dr. Barbara Schading</strong></td>
<td>3:00 – 4:15 ET</td>
</tr>
<tr>
<td>March 27, 2014</td>
<td>Safeguarding international and interstate Commerce (Export operations, Export certification, and Solid wood packing material)</td>
<td><strong>Guest Lecturer – Kara Spofford</strong></td>
<td>3:00 – 4:15 ET</td>
</tr>
</tbody>
</table>
| ISPM 12 – Phytosanitary Certificates  
ISPM 15 – Guidelines for Regulating Wood Packaging Material in International Trade |
<p>| April 1, 2014 | Use of molecular diagnostics in making regulatory determinations | <strong>Guest Lecturer – Dr. Pat Shiel</strong> | 3:00 – 4:15 ET |
| April 3, 2014 | The use of Spatial Analysis in Plant Protection | <strong>Guest Lecturer – Dr. Dan Borchert</strong> | 3:00 – 4:15 ET |
| April 8, 2014 | The art of negotiation – Bilateral, multilateral &amp; international negotiation | <strong>Guest Lecturer – Lottie Erikson</strong> | 3:00 – 4:15 ET |
| April 10, 2014 | Emergency Response, review of Incident Command System (ICS) | <strong>Guest Lecturer – Craig Guthrie</strong> | 3:00 – 4:15 ET |
| Written Assignment 2 Due |
| April 15, 2014 | Core competencies – more than just the technical skills | <strong>Guest Lecturer – Todd Dutton</strong> | 3:00 – 4:15 ET |
| April 17, 2014 | How to get a job with APHIS/PPQ | <strong>Guest Lecturer – Darah Coley</strong> | 3:00 – 4:15 ET |
| Open Notes Exam Available |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 22, 2014</td>
<td>3:00 – 4:15 ET</td>
<td>Lecturer – Todd Dutton</td>
<td>Open Notes Exam Due</td>
</tr>
</tbody>
</table>

- Your PPQ State Plant Health Director