

# EXOTIC SPECIES AND BIOSECURITY ISSUES

## ALS 4161/6166

3 CREDITS  
FALL 2020

### INSTRUCTOR INFORMATION

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#### Instructor

**Dr. Tolulope Agunbiade**

#### Contact Information & Hours

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### GENERAL INFORMATION

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#### Course Description

This course covers a study of U. S. policies and programs affecting agricultural biosecurity. Emphasis is on current agricultural extension and regulatory programs, and the policies and procedures involved in detecting and reporting non-indigenous species. Students will develop the analytical capabilities to assess the consequences of agricultural biosecurity threats. The course will explore content using narrated PowerPoint presentations, selected video clips, and assigned readings.

#### Learning Objectives

After completing this course, students will be able to:

- Describe the importance of invasive species to U.S. agriculture and natural areas
- Evaluate trade issues and their relevance to agricultural biosecurity
- Explain the principles and basic practices of pest exclusion, eradication, and management tactics for invasive species issues

- Assimilate information on invasive species, and develop inferences from case study examples
- Describe the research, extension, and regulatory components of invasive species issues
- Appraise and appreciate early detection, and correct identification of new and emerging pest problems
- Evaluate news and developments reported in the popular and scientific media on issues affecting the subject matter of this course
- Describe the importance of insect vectors to animal and human health
- Describe the importance of exotic animal disease threats to agriculture

### Prerequisite

Integrated Principles of Biology 1 and Laboratory (BSC 2010 and 2010L), and Integrated Principles of Biology 2 and Laboratory (BSC 2011 and 2011L) or equivalent.

### Course Website

The course content, including narrated lectures, selected video clips, assigned readings, examinations, quizzes, and discussion assignments will be available through the course website in Canvas at <https://elearning.ufl.edu/>. Each week, students are required to view the lectures, selected video clips and associated readings, participate in the discussion assignments, and take the quizzes and examinations prior to the assigned due dates to complete the course requirements. Weekly modules will be available by 8:00 am on Monday of the module week.

### Course Communications

In addition to the assigned discussion assignments, students are encouraged to post general questions on topics taught in the class under the 'General Course Questions' thread. The instructor will respond to the questions. Other students are also encouraged to respond to the questions. Private questions should be sent to the instructor via e-mail. Students will be notified by Canvas e-mail if instructor will be unavailable for office hours.

## COURSE MATERIALS

### Textbooks/Readings

The following textbooks are recommended for this course.

- Daniel A. Sumner. 2003. Exotic Pests and Diseases: Biology and Economics for Biosecurity, 1st edition, 265 pages. Wiley-Blackwell
- Jorge E. Pena. 2013. Potential Invasive Pests of Agricultural Crops, 460 pages. CABI Invasives
- Ryan Burnette. 2013. Biosecurity: Understanding, Assessing, and Preventing the Threat, 1st edition, 328 pages. John Wiley and Sons Ltd

## COURSE SCHEDULE

Week	Date	Topic	Tasks/Assessments
1	08/31 - 09/04	Biosecurity and the importance of invasive species	Introduction posts due
2	09/07 - 09/11	Invasive species, trade, and Florida invaders	Quiz 1 due
3	09/14 - 09/18	Methods for invasive species management in Florida	Term paper topic due Exam 1 due
4	09/21 - 09/25	Arthropods as disease vectors and the Florida-Cuba pathway	Discussion 1 due Pest risk assessment report topic due
5	09/28 - 10/01	International, regional, and local arthropod pests of concern  <i>Guest Lecture: Dr. Lisa Conti, FDACS Deputy Commissioner and Chief Science Officer</i>	Quiz 2 due
6	10/05 - 10/09	U.S. Department of Human and Health Services (HHS) and select agents: Potential diseases of human concern	Exam 2 due Term paper due
7	10/12 - 10/16	Animal biosecurity	Quiz 3 due Discussion 2 due Evaluation of other students' term papers due
8	10/19 - 10/23	Aquaculture biosecurity and fish risk assessment  <i>Guest Lecture: Dr. Jeff Hill, Department of Forest and Aquatic Sciences</i>	Pest risk assessment report due
9	10/26 - 10/30	Humans and biosecurity issues	Quiz 4 due
10	11/02 - 11/06	Mollusks as invasive species	Exam 3 due
11	11/09 - 11/13	Plant parasitic nematodes and the importance of sample submission	Discussion 3 due Quiz 5 due
12	11/16 - 11/20	Plant pathogens and weed issues  <b>Happy Thanksgiving!</b>	
13	11/23 - 11/27	Incident Command System (ICS) and the state of Florida response  <i>Guest Lecture: Mr. Steve Hildebrandt, FDACS-DPI</i>	Exam 4 due

## **COURSE POLICIES**

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### **Attendance Policy**

This is an online class. Students are, therefore, required to view the weekly lectures, selected video clips, and the associated readings each week. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

### **Course Requirements**

There are 4 examinations, 3 graded discussions, a graded introduction post, 5 quizzes, a term paper, and a pest risk assessment report (for graduate students) to complete the course requirements.

### **Examinations**

There will be four, non-cumulative exams (100 points each). The exams are closed-book and will consist of 50 questions that will be a mix of multiple choice, mix and match, fill in the blank, true/false, and short essay questions. Each exam will be made available and accessible in Canvas on Friday from 8:00 am EST to 11:59 pm EST of the exam week. Once you begin the exam, you will have 60 minutes to complete it in a single session, so do not open the exam until you are ready to complete it.

### **Quizzes**

There will be five quizzes (10 points each) throughout the course, except the week of the exams. The quizzes will consist of 10 multiple choice questions. The quizzes will be made available and accessible in Canvas on Friday from 8:00 am EST to 11:59 pm EST of the quiz week. Once you begin the quiz, you will have 10 minutes to complete it in a single session, so do not open the quiz until you are ready to complete it.

### **Discussions**

There will be three discussion assignments (50 points each) throughout the course. Questions will be posted by the instructor in the discussion forum in Canvas and students are required to upload their responses. These questions are designed to aid the students' understanding of biosecurity issues. Each discussion assignment will be open for one week.

### **Term Paper**

All students will complete a scientific, research-based written term paper assignment worth 140 points. The topic should be focused on an analysis of a biosecurity system. For example, if you are a pre-medical student, you may want to focus on disease transmission associated with insect vectors. If you are more interested in environmental science, you could write about an invasive species in Florida (how it got here, how it invaded, management tactics, etc.). More information on this assignment will be posted in Canvas. The term paper should be about 5 pages in length (including the title page, references, tables and/or figures). It should be single-spaced, 12 point, Times New Roman font with 1-inch margins. Your written assignment will require that you can assimilate lecture, reading, and other assignment content from the course, and search for your own references in some cases. Written assignments will be graded on the following criteria:

- Requested topic addressed
- Logical organization of content
- Use of requested font, margins, and length requirements for the written assignment
- Appropriate and accurate references utilized

- Grammatical accuracy

You are also required to evaluate two of your peer's term papers. Term paper assignments are due by 11:59 pm on the due date. Late submissions will be marked down by 5 points per day. 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.

Overall, the term paper evaluations will be as follows:

1. Evaluation of term paper topic by instructor (10 points) – you are to submit the topic of your term paper, including a 3 – 5 sentence content summary, and a list of 3 references for approval by the instructor before the due date. Submissions should be made in Canvas and will be evaluated using a rubric
2. Evaluation of term paper by instructor (100 points) – you are to submit your term paper before the due date for evaluation by the instructor. The term paper should not be more than 5 pages in length. The term paper will be evaluated by the instructor using a rubric
3. Evaluation of term paper by peers (20 points) – Each term paper will be evaluated by two other students in the class using a rubric. The scores will be averaged, and that average score is the score the student receives
4. Submission of peer evaluation of term paper (10 points) – you are to submit your evaluation of the term papers of two other students that will be randomly assigned to you in Canvas. You will receive 0 points for no submission, 5 points for one submission and 10 points for 2 submissions

### ***Pest Risk Assessment Report (required for graduate students only)***

For the pest risk assessment report (100 points), graduate students will prepare an analysis of a pest of concern for development of a pest risk assessment. It could be a pest of medical or agricultural importance. The pest selected must differ from pests covered in other course assignments. The pest risk assessment should not be more than 10 pages in length (including the title page, references, tables and/or figures). It should be double-spaced, 12 point, Times New Roman font with 1-inch margins. You are to submit your topic to the instructor for approval before the topic submission due date. The references should be at least 5, from primary literature, and must be according to the Entomological Society of America (ESA) style. Instructions on how to structure the report will be posted in Canvas. The reports are due by 11:59 pm of the due date. Late submissions will be marked down by 5 points per day.

Overall, the pest risk assessment report evaluations will be as follows:

1. Evaluation of the pest risk assessment topic by instructor (10 points) – You are to submit the topic of your pest risk assessment report, including a 3 – 5 sentence content summary, and a list of 3 references, for approval by the instructor before the due date. Submissions should be made in Canvas and will be evaluated using a rubric

- Evaluation of pest risk assessment report by the instructor (90 points) – you are to submit your pest risk assessment report before the due date for evaluation by the instructor. The pest risk assessment report will be evaluated by the instructor using a rubric

## GRADING POLICIES

The course grade is based on performance on the exams, quizzes, participation in discussion activities, and the written assignments. The final grades will be converted to percentages. The final grade will be assigned as follows:

Course Requirements		Points Value	Total Points (Undergraduates)	Total Points (Graduates)
Introduction post		10	10	10
Discussions		50 each	150	150
Quizzes		10 each	50	50
Exams		100 each	400	400
Term paper	<i>Evaluation of term paper topic by instructor</i>	10	10	10
	<i>Evaluation of term paper by instructor</i>	100	100	100
	<i>Evaluation of term paper by peers</i>	20	20	20
	<i>Submission of peer evaluation of term paper</i>	10	10	10
Pest risk assessment report (graduate students only)	<i>Evaluation of pest risk assessment topic by instructor</i>	10	N/A	10
	<i>Evaluation of pest risk assessment report by the instructor</i>	90	N/A	90
<b>Total</b>			<b>750</b>	<b>850</b>

## Grading Scale

Grade	Percentages
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	< 59.9

## Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

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## UNIVERSITY OF FLORIDA POLICIES AND ASSISTANCE

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### 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>

### Academic Honesty

The University requires all members of its community to be honest in all endeavors. Cheating, plagiarism, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. Your instructor fully expects you to adhere to the academic honesty guidelines you signed when you were admitted to UF.

Plagiarism is the use of ideas or writings produced by someone else. You should not use the writings of another person, including material from the internet (WWW), without putting the ideas in your own words, or placing the copied material in quotes and attributing authorship. In the scientific literature, quotations are rarely used. You should use your own words for answering questions on exams, and in your class project.

As a result of completing the registration form at the University of Florida, every student has signed the following statement:

*"I understand the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University. Furthermore, on work submitted for credit by UF students, 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 to be assumed that all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. This policy will always be vigorously upheld in this course.

Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to the 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/process/student-conduct-honor-code>

### **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.

### **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/](http://www.dso.ufl.edu/drc/)

### **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling Center provides 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 University Counseling and Wellness Center, 3190 Radio Road, 352-392-1575  
[www.counseling.ufl.edu](http://www.counseling.ufl.edu)
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Wellness Coaching
- U Matter We Care, [www.umatter.ufl.edu/](http://www.umatter.ufl.edu/)
- Career Resource Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>