FOR 6934 Forest Ecosystem Health

3 credit hours

Fall, 2016

Instructor: J.A. Smith, Associate Professor; 352-846-0843; jasons@ufl.edu

Office Hours: 24 hours a day by email (I will reply within 24 hours) or by phone

Course Website: https://ufl.instructure.com/courses/330098

Course Overview and Learning Objectives:

Forest Ecosystem Health is an integrated course dedicated to the study of the health of forested ecosystems with emphasis on emerging threats to tree health and how these threats relate to ecological restoration. This course is designed to serve as an elective for the Ecological Restoration M.S. program, but is ideal for anyone with an interest in management of forests. We will cover a number of topics in the course, including: What is forest health?; Roles of pests and diseases in forests; Pathways and movement of invasive species in forests; Invasive species biology, impacts and management; Restoring imperiled species; Climate change and forest health; Assisted migration and altered forests; Impacts of tree mortality on forest function and biodiversity. We will draw on numerous contemporary and historic examples of forest health issues and how they have been or could be addressed through research and management. The following student learning objectives will drive class activities. By the end of the course, students should be able to:

1. Discuss and evaluate concepts of forest and ecosystem health.
2. Understand and recognize interactions between pathogens, insects and tree hosts in in a forest system.
3. Synthesize the biology, history, impacts from and management of exotic pests and diseases in forests in North America.
4. Hypothesize how future exotic pests and diseases could be avoided or managed.

General Course Procedures:

This course is designed to be asynchronous – you can go at your own pace. However, in order to improve cohesiveness of course content and to get to know one another, we will have several components that will involve participation (see course schedule below).

Ideally, for a course like this, we would take field trips to see forest health issues and to provide examples. Since that is not possible, I have designed the assignments to encourage you to spend time in forests near to you.

Supplies: You may find a three-ring, loose-leaf notebook to be useful in aiding organization of handouts and notes.

Texts: There is no teaching textbook available to support this course. However,
the following books will serve as reference texts in support of some portions of the lecture materials. While these books are not teaching texts, and are not required for the course, they are excellent professional references and as such they should be viewed as an investment in your personal library as well as items in support of this particular course.

Sinclair, Lyon, and Johnson. 2005. Diseases of Trees and Shrubs. 2nd Ed., Cornell University Press.

Johnson and Lyon. 1988. Insects that Feed on Trees and Shrubs. 2nd Ed., Cornell University Press.

Edmonds, Agee and Gara. 2000. Forest health and protection. McGraw Hill.

Reading assignments will be posted in PDF format on the course website.

Evaluation of Learning/Performance:

Letter grades will be assigned as follows:

Letter Grade	***Numeric Value***
A	93-100
A⁻	90-92
B⁺	86-89
B	83-85
B⁻	80-82
C⁺	76-79
C	73-75
C⁻	70-72
D⁺	66-69
D	63-65
D⁻	60-62
E	<60

Class Participation: A weekly discussion forum will be initiated to discuss topics. I will pose a question and want you to reply in the forum. This discussion will count toward your class participation grade (5% of total). Please feel free to pose your own questions and discuss these as well.

"Favorite Exotic" Paper and Report:
To be assigned and detailed in early September. The paper and presentation will comprise 30% of the course grade and will be the "big assignment" of the course. You will provide a presentation (recorded) for your peers to watch and comment on. The paper is due on November 1. Presentation dates will be assigned.

Sick tree scavenger hunt and diagnosis: This assignment will involve searching for, photographing and providing a diagnosis for sick trees in your area and will account for 15% of the class grade. This is due October 10.

Dueling paper reviews: There will be three sets of peer-reviewed papers that present two contrasting viewpoints on a topic related to forest health you will be expected to read one set (of your choice) and write a short (1 page) summary of **your assessment** of the papers and which made a better case. These will be worth 30% of the course grade (10% each). These are due on October 24.

Final exam: There will be a take-home, open-book final exam for the course. It will not be a typical exam, but may involve asking you to research a topic and answer a series of questions. The final exam will be worth 20% of the course grade.

Important Dates:

10 October: **Sick tree visitation assignment due**

24 October: **Dueling paper review due**

1 November: **Favorite exotic paper due**

Week of November 17: **Alien Presentations (using voicethread)**

December 10: **Final exam due 5:00 p.m.**

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.
University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

Netiquette: Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Describe what is expected and what will occur as a result of improper behavior] http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf
Getting Help:
For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.
Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

Tentative Course Schedule (subject to change)

ɔic/Module		Reading
oductions (voicethread)		
spectives on ecosystem health		Kolb et al., 1994
at is forest health?		Barnard, 2002
resher on tree anatomy and function (on your own o lecture)		http://www.forestpathology.org/concepts.html
est damage due to anthropogenic activities		
oduction to diseases of trees		
w to recognize sick trees		
oduction to the Kingdom Fungi		Boddy et al., 2010 Kupferschmidt, 2012
ɔt diseases of trees		
m diseases of trees		
iar diseases of trees		
oduction to insect pests of forests		
ect pests of stems of trees		
ect pests of foliage of trees		
oduction to exotic species and forest health; hways and establishment of exotics		Hulme, 2009; Lovett et al., 2006
mples of current threats from exotic forest insect		Watch: *Fading Forests II*

sts and diseases		
estnut blight case study (billions of dead trees)		Anagnostakis, 1987
ch elm disease case study (classic example)		Brasier et al., 2001
ite pine blister rust case study (ecological impacts)		Schoettle et al., 2007
urel wilt case study		Ploetz et al., 2013
rida torreya case study (assisted migration)		Smith et al., 2011
ests and climate		Carroll et al., 2003
storing healthy forests		Jacobs, 2007
gulatory and policy issues of forest health		