

Forest Ecosystem Health - FOR 6151

1 Overview

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.

- 3 Credits
- Fall Semester
- 100% online, asynchronous
- <http://elearning.ufl.edu/>

Course Prerequisites: none

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

- Please use the Canvas message/Inbox feature for fastest response.
- Office hours: available by email or phone; office visits available by appointment.

Textbook(s) and/or readings: 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 and are listed in the Course Content section.

2 Learning Outcomes

At the end of this course, each student will be able to:

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

3 Course Logistics

This course is entirely web-based and students may access lectures, readings, and supporting materials as they become available.

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. In addition, I will upload video clips periodically to take you in the field with me.

Instructions for any required technologies (e.g. VoiceThread) will be provided. Post questions about course content or logistics in the appropriate Discussion for the benefit of classmates. Questions about grades should be sent privately through Inbox or email.

Technology Requirements:

- A computer or mobile device with high-speed internet connection.
- A headset and/or microphone and speakers; a web cam is suggested.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. [What browser am I using?](#)
- Voicethread: <http://ufl.voicethread.com> (more instructions will be provided)
- Adobe Connect: <http://ufifas.adobeconnect.com/> (more instructions will be provided)

3.1 Assignments & Deliverables

Participation

A weekly discussion forum will be initiated to discuss topics. I will pose a question and want you to reply in the forum. You must post at least one original comment and one reply to another student during each week's discussion. This discussion will count toward your class participation grade. 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. 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.

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.

Final project:

For the final project for FOR 6934, you are asked to write a “fact sheet” type of publication for a forest tree disease or insect pest that may be (or currently) is a threat to US forests. I would like to see you contribute to education of others. This fact sheet should be written for a general audience (think of it as an extension publication) and include the following:

- General biology of the organism (correct Latin name, origin, life history etc.)
- Host range
- Describe the type of damage it causes
- Provide management options
- Links for more information
- Photos (give credit for source) – bugwood.org is a good source

Be sure to be careful to provide good citations for all the information and make it look as professional as possible. This will be used by people looking for information on the web and may be used by extension agents, land-owners, foresters and students.

3.2 Grades & Grading Scale

Participation	5%
Favorite Exotic	30%
Sick Tree Diagnosis	15%
Dueling Papers	30% (3 @ 10%)
Final Project	20%

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Grading Scale (%)

A 93-100
A- 90-92.99
B+ 86-89.99
B 83-85.99
B- 80-82.99
C+ 76-79.99
C 73-75.99
C- 70-72.99
D+ 66-69.99
D 63-65.99
D- 60-62.99
E <60

4 Course Content

Learning Modules

Introductions (VoiceThread)

Perspectives on ecosystem health
Kolb et al., 1994

What is forest health?

Refresher on tree anatomy and function (on your own – no lecture).

<http://www.forestpathology.org/concepts.html>

Forest damage due to anthropogenic activities. Wingfield et al., 2015; Chazdon, 2013

Introduction to diseases of trees

How to recognize sick trees

Introduction to the Kingdom Fungi. Boddy et al., 2010; Kupferschmidt, 2012

Root diseases of trees

Stem diseases of trees

Foliar diseases of trees

Introduction to insect pests of forests

Insect pests of stems of trees

Insect pests of foliage of trees

Introduction to exotic species and forest health; Pathways and establishment of exotics. Hulme, 2009; Lovett et al., 2006

Examples of current threats from exotic forest insect pests and disease. Watch: Fading Forests II

Chestnut blight case study (billions of dead trees). Anagnostakis, 1987

Dutch elm disease case study (classic example). Brasier et al., 2001

White pine blister rust case study (ecological impacts). Schoettle et al., 2007

Laurel wilt case study. Ploetz et al., 2013

Florida torreyia case study (assisted migration). Smith et al., 2011

Forests and climate. Carroll et al., 2003; TBA

Restoring healthy forests. Jacobs, 2007

Regulatory and policy issues of forest health

5 Policies and Requirements

This syllabus represents current plans and objectives for this course. As the semester progresses, changes may need to be made to accommodate timing, logistics, or to enhance learning. Such changes, communicated clearly, are not unusual and should be expected.

5.1 Late Submissions & Make-up Requests

It is the responsibility of the student to access on-line lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course.

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk 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 consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

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>

5.2 Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

At approximately the mid-point of the semester, the School of Forest Resources & Conservation will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required, but encouraged. This is not the UF Faculty Evaluation!

At the end of the semester, students are expected to provide UF with feedback on the quality of instruction in this course using a standard set of university and college criteria (UF Faculty Evaluations). 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>.

5.3 Netiquette: Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Failure to do so may result in loss of participation points and/or referral to the Dean of Students' Office. <http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

5.4 Academic Honesty Policy

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 or 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>.

5.5 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.

5.6 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.

6 Getting Help

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- Learning-support@ufl.edu | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

6.1 Student Life, Wellness, and Counseling Help

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>
- Career Resource Center <http://www.crc.ufl.edu/>
- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.

6.2 Student Complaint Process

The School of Forest Resources & Conservation cares about your experience and we will make every effort to address course concerns. We request that all of our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFRC Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Students in online courses: <http://www.distance.ufl.edu/student-complaint-process>
- Students in face-to-face courses:
https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf