

FOR 4110 / FOR5159
Ecology and Restoration of the Longleaf Pine Ecosystem
3 Credits
Web
Spring 2017

Instructor:

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Prerequisite: None; ecology course suggested

Catalog description: History, structure, function and ecological and economic importance of longleaf pine ecosystems; regeneration ecology, stand developmental dynamics and management, restoration techniques, ownership patterns, and socioeconomic and political and policy aspects of restoration.

Student learning outcomes: The following course related performance goals would be expected from the students at the conclusion of the course:

1. Summarize the key concepts and factors that define the ecological and economic importance of longleaf pine ecosystems
2. Explain the forcing variables that led to longleaf pine replacement and barriers to restoration
3. Describe theoretical and technical knowledge from ecology, soils and other bio-physical sciences that form the scientific foundation for ecological restoration

4. Apply various techniques used in ecological restoration, evaluation and monitoring to formulate appropriate management protocols for case studies and problems
5. Discuss the socio-economic, policy and political dimensions of ecological restoration

Recommended Textbook:

Jose, S., Jokela, E.J. and Miller, D.L. 2006. The Longleaf Pine Ecosystem: Ecology, Silviculture and Restoration. Springer Science, New York.

Course Grading System (specific items are described in detail on next page):

Lecture summary ¹ and student quiz questions	8 @ 10 points	80
Weekly quiz questions	10 @ 2 points	20
Discussion thread	3 @ 10 points	30
Interview a restoration professional (Ecologist, Forester, Wildlife biologist)	1 @ 25 points (only FOR 5159 students)	25
Abstracts of scientific articles	2 @ 10 points	20
Term paper ² or Narrated PowerPoint	1 @ 75 points	75
Tests ³	2 @ 50 points	100

¹Late work will be penalized 5% per day

² **Term paper required for FOR5159**

³ Make-up tests will be given only if the student has been excused prior to the original scheduled date of the test and should be taken within seven days of the original test date.

Letter grades will be assigned as follows:

<u>Letter Grade</u>	<u>Numeric Value</u>
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

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>

Make-up exam policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with University policies which can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Lecture Summary:

Please prepare a one page summary of the selected lectures. It should be single spaced with one inch margins on all sides and no larger than a 12 point font. The summary should include (1) objective of the lecture (2) major discussion points (3) overall message (4) your thoughts on the topic (5) any suggestions for improvement of the lecture format or content

Student Quiz questions:

Each week please prepare 2 questions to be evaluated for use as test questions.

Weekly Quiz questions:

To help you prepare for test, you will have two quiz questions each week that will be graded. These quizzes are designed to help you understand the style of questions and type of information that will be included on tests. THESE QUESTIONS WILL NOT BE THE ONLY QUESTIONS ON THE TESTS.

Discussion thread:

When a discussion is scheduled, I would like you to contribute to the discussion by sending a brief (4 to 5 sentences) commentary on the topic. Each commentary should be supported by a reference from a journal article, book or reliable website (i.e. USDA, NRCS etc.) unless it involves personal experience (research/job related). You could be the originator (the first person to send a comment) or you could be the responder (who responds to an original message). I want each one of you to post at least three messages in each scheduled discussion thread. Post early and often. Points will be deducted for post(s) too late in the week for adequate response(s).

Interview a restoration professional:

Identify a restoration professional; Call him or her and obtain permission for the interview. Come up with a set of questions and send the questions to the individual in advance. On the day of the interview either meet this individual in person or call over the phone. Ask the questions and write down the responses.

Make sure to send the draft report to the professional so that he or she is comfortable with your interpretations of the answers. Once you receive the approval from the restoration professional, submit the report on-line. **This component is required only for graduate students (i.e. FOR 5159 students).**

Abstracts of Scientific articles:

Select a full length article from a scientific journal (see the list of journals below) that deals with any topic that reinforces or expands upon material covered in this course. Prepare a summary (half to one page long, typed) that

1. Gives a complete reference to include the author(s), year, article title, name of journal, volume, and page numbers. Use the format found in the example below (4 points; wrong citation format will not receive any points).
2. Describe the topic studied (2 points).
3. Give the findings that resulted from the research (2 points).
4. Describe what you found most interesting about the article (1 point).
5. Describe the relevance of the article to topics covered in this course (1 point).

E.g. Citation Format:

Jenkins, M.A., Jose, S., and White, P.S. 2007. Impacts of an exotic fungal disease forest community composition and structure and the resulting effects on foliar calcium cycling. *Ecological Applications* 17:869-881

List of journals:

Ecology
Ecological Applications
Ecological Engineering
Ecological Restoration
Journal of Ecology
Journal of Applied Ecology
Journal of forestry
Journal of Wildlife Management
Forest Ecology and Management
Plant Ecology
Restoration Ecology
Oecologia
Wetlands

Term Paper or Narrated PowerPoint:

Graduate students must choose the term paper option (i.e. FOR5159 students).

In consultation with the instructor, each student will choose a topic for a synthesis article. The synthesis article should follow the format given below or the review article format of any major ecology journal.

1. Introduction (including a rationale and need for the synthesis)
2. Objectives of your paper
3. Synthesis of the topic (this may contain various sub-sections)
4. Discussion
5. Conclusion
6. Literature Cited
7. Relevant Tables
8. Relevant Figures

SUGGESTED LENGTH = 10 page text (items 1 through 5) + Literature Cited + Tables and Figures. See further details below

Double spaced (a font size of 10 or 12) with 1" margins on all sides.

A minimum of 10 relevant *journal articles* should be used in preparing your **term paper**.

OR

In consultation with the instructor, each student will choose a topic and prepare a 20 slide / 20 minute narrated PowerPoint. This PowerPoint will be posted in CANVAS for the next class to use and should not cover material already provided in lectures.

A minimum of 5 relevant *journal articles and 5 other relevant references* should be used in preparing your PowerPoint

A Literature Cited section must be provided to document the references used in preparation of the PowerPoint

Tests:

Tests will be online. You will have multiple choice, true/false, short answer questions and long answer questions. Tests must be taken within the allotted time, which is short. You cannot use notes or other materials and if you try, you will find you are not able to complete the test in the allotted time. Further instructions will be given in the beginning of each test.

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>.

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/process/student-conduct-honor-code>.”

Software Use:

All faculty, staff and students of the University of Florida 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.

Student 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
 - Wellness Coaching
- *E-learning Technical Support, 352-392-4357 (select option 2) or e-mail to Leraning-support@ufl.edu Website: <https://lss.at.ufl.edu/help.shtml>*

Ecology and Restoration of the Longleaf Pine Ecosystem

Week	General Topic	Speaker	Suggested Reading	Due by Friday of the Week (except Test 2)
1	Course introduction	Debbie Miller	LL Ch. 1-2	
	Overview of longleaf pine ecosystems, Past, present and future restoration needs	Debbie Miller		No summary
2	Principles of Restoration Ecology Part I and II	Megan Brown		Lecture Summary # 1 And questions
			Article: 'Primer'	Quiz
3	Introduction to Soils (Review) Soil Ecosystem Services	Wes Wood	None	No summary
				Quiz
4	Longleaf pine Community Dynamics Landscapes and Communities-Disturbance Part I and II	Debbie Miller	LL Ch. 3	Lecture Summary # 2 And questions Abstract #1
				Quiz
5	Uneven-aged Silviculture of Longleaf pine Part I and II	Kimberly Bohn	LL Ch. 4-5, 7	Lecture Summary # 3 And questions
			Article: 'Silviculture that Sustains'	Quiz
6	Restoring overstory, Ecological considerations, Restoration techniques	Scott Sager	LL Ch. 9	Lecture Summary # 4 And questions
	Fire Exclusion	Kevin Hiers		Quiz
7	Growth and Yield of Natural and Planted Longleaf pine	Kimberly Bohn	LL Ch. 8	Abstract # 2 and questions
			Article: 'Longleaf Density'	Quiz
8	Test 1			

Week	General Topic	Speaker	Suggested Reading	Due by Friday of the Week (except Test 2)
9	Native Understory Restoration in Longleaf Ecosystems	Carol Denhof	LL Ch. 10	Lecture Summary #5 & Questions
	Restoring the Understory Part I and II	Johanna Freeman	Reference Materials	Quiz
10	SPRING BREAK			
11	Faunal (vertebrate) diversity of Longleaf pine ecosystems	Debbie Miller	LL Ch. 6, 11	Discussion Thread #1
	Management Strategies for Recovery of Fragmented RCW Populations	Roy DeLotelle		Lecture Summary #6 and Questions
	RCW Ecology, Status and Management	Kristina Witter		Quiz
12	Managing Invasive Plants Videos: Invasive Alien Plants & Cogongrass	Don Hagan	Articles under wk. 12	Lecture Summary #7 & Questions
				Quiz
13	Monitoring and Evaluation Conservation training module PDF: 5 Fundamentals of Vegetation Monitoring	Doria Gordon	LL Ch. 12 Article: 'Putting Monitoring First'	Discussion Thread # 2 Interviews Due
14	Economics and Policy of restoration Video: The Economics of Ecosystem Restoration	Damian Adams	LL Ch. 13	Lecture Summary #8 & Questions
				Quiz
15	Video: Role of Public-Private Partnerships in Restoration	Vernon Compton	LL Ch. 14 Article: Compton et al, 2006	Discussion Thread #3
16	Term paper OR PowerPoint			Due April 19th
17	Test 2			Open: April 22 Closes: April 26