

FOR 4110 / FOR 5159
Ecology and Restoration of the Longleaf Pine Ecosystem
(3 Credits)
Spring 2023

Instructor:

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Prerequisite: None; Ecology course recommended.

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

Assessments:

Lecture Summaries with Student Questions:

Lecture summary assignments are a one-page summary of the selected lectures. Page format should be single spaced, one-inch margins, and 12-point font. The text should be written in paragraph form with complete sentences. Please provide your name only with no other additional header. The summary must 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. Each of the five components listed above should be identified in the text, i.e., “the overall message of the lecture was...” Students that do not follow the format instructions will lose 2 points.

Student Questions: Write two questions based on the lecture content to be evaluated for use as test questions.

Journal Article Summaries: FOR 5159 Graduate Students only

Journal article summary assignments are a one-page summary of the selected refereed articles. Page format should be single spaced with one-inch margins and 12-point font. The text should be written in paragraph form with complete sentences. Please provide your name only with no other additional header. The summary must include **(1)** objective of the article **(2)** major discussion points **(3)** overall message **(4)** your thoughts on the topic **(5)** suggestion of an additional study that would further the information provided in the article reviewed. Each of the five components listed above should be identified in the text, i.e., “the overall message of the article was...”. Students that do not follow the format instructions will lose 2 points.

Weekly Quizzes:

Weekly quizzes consist of two quiz questions based on the corresponding module content (i.e., lectures, required readings). 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 TESTS.

Discussion Thread:

Discussion thread assignments require students to post one original comment and two replies to fellow students. The original comment post is due by the following Monday, and the reply to posts should occur throughout that week with final comments due Friday. Each post (original comment and replies to fellow students) should be at least 4 to 5 sentences, and the commentary must be substantial (i.e., “I agree” is not enough). At least one post should include a reference from a journal article, book (other than the discussion prompt reading(s) and the recommended textbook), or reliable website (i.e., USDA, NRCS, etc.) or provide information from personal experience (research/job related). Post early and often. Points will be deducted for posts submitted too late in the week for peer response.

Interview a Restoration Professional: FOR 5159 Graduate Students only Identify a restoration professional (Ecologist, Forester, Wildlife biologist, etc.); call them and obtain permission for the interview. Come up with a set of questions

and send the questions to the individual in advance. There is no specific number of questions or format required (you have creative freedom). 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.

Abstracts of Scientific Articles:

Abstract assignments require students to 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 (Abstracts are generally 250 words or less) that includes:

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. Describes the topic studied and methods used (2 points).
3. Gives the findings that resulted from the research (2 points).
4. Describes what you found most interesting about the article (1 point).
5. Describes the relevance of the article to topics covered in this course (1 point).

Do not use articles provided throughout this course.

Example 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:

<i>Ecology</i>	<i>Journal of forestry</i>
<i>Ecological Applications</i>	<i>Journal of Wildlife Management</i>
<i>Ecological Engineering</i>	<i>Forest Ecology and Management</i>
<i>Ecological Restoration</i>	<i>Plant Ecology</i>
<i>Journal of Ecology</i>	<i>Restoration Ecology</i>
<i>Journal of Applied Ecology</i>	<i>Oecologia</i>
<i>Wetlands</i>	<i>Others acceptable with prior approval</i>

Term Paper or Narrated PowerPoint:

Graduate students (FOR 5159) must choose the term paper option. Undergraduate students may choose the term paper OR narrated PowerPoint.

Term Paper:

In consultation with the instructor, each student will choose a topic for a synthesis paper. The synthesis paper should follow the format given below or the review article format of any major ecology journal. This assignment is a review of the literature. It should not cover material already provided in lectures except as introductory material. The topic could be related to longleaf, but it can be about restoration of another ecosystem. This should not be a rehash of what we have already covered but a deeper insight into a topic of interest.

Format for term paper:

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 (sections 1-5) + Literature Cited + Tables and Figures. Page format should be double spaced with one-inch margins, and 10- or 12-point font. A minimum of 10 relevant *journal articles* should be used in preparing your term paper.

Narrated PowerPoint:

In consultation with the instructor, each student will choose a topic and prepare a 10-minute narrated PowerPoint presentation. 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:

The mid-term exam will cover the first half of the course and the final exam will cover the second half of the course. Final exam is not cumulative. Students will have multiple choice, true/false, short answer questions, and essay questions. Exams 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 exam.

Course Grading System

Assessment Type ¹	Undergraduate students (FOR 4110) Points	Graduate students (FOR 5159) Points
Lecture summaries with student questions	70 (7 total, 10 points each)	40 (4 total, 10 points each)
Journal article summaries	none	30 (3 total, 10 points each)
Weekly quizzes	20 (10 total, 2 points each)	20 (10 total, 2 points each)
Discussion threads	30 (3 total, 10 points each)	30 (3 total, 10 points each)
Interview with a restoration professional	none	25
Abstracts of scientific articles	20 (2 total, 10 points each)	20 (2 total, 10 points each)
Narrated PowerPoint or Term paper ²	50	50
Tests ³	100 (2 total, 50 points each)	100 (2 total, 50 points each)

¹ Late 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 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>

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. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.a.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.a.ufl.edu/public-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>.

Plagiarism Policy:

Do not submit work previously submitted to another class to fulfill requirements of this class. All work submitted through Canvas will be evaluated by the software **Turnitin**. **Turnitin** compares student submission to billions of websites and other papers submitted and highlights exact matches. Instructors will verify if students obtained their information from appropriate sources and properly cited those sources.

UF Plagiarism Policy: <http://regulations.ufl.edu/chapter4/4041.pdf>

Plagiarism Definition: A student shall not represent as the student's own work all or any portion of the work of another. Plagiarism includes but is not limited to:

- Quoting oral or written materials including but not limited to those found on the internet, whether published or unpublished, without proper attribution
- Submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authorized by the student
- Unauthorized use of materials or resources
- Prohibited collaboration or consultation
- Submission of paper or academic work purchased or obtained for an outside source

Software Use:

All faculty, staff and students at 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, <https://disability.ufl.edu>

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 & 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. If you are at the Milton campus, call the University Counseling & Wellness Center if you need help after 5:00 EST.

- *University Counseling & Wellness Center*, 3190 Radio Road, 352-392-1575, 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/

- Career Connections Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>.

Student Complaints:

- Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>.
- Online Course: <http://www.distance.ufl.edu/student-complaint-process>

Spring 2023 Course Schedule

Week	Lecture Topics	Speaker(s)	Readings	Due by Monday the following week
1	Course Introduction Longleaf Introduction	Debbie Miller	LL Ch. 1, 2	Class Introductions
2	Principles of Restoration Ecology	Megan Brown Debbie Miller	The SER International Primer on Ecological Restoration	Lecture Summary #1 with Questions Quiz 1
3	Introduction to Soils Unifying Characteristics and Variation of the Longleaf Ecosystem	Ashlynn Smith Debbie Miller	Brady & Weil, Ch. 3, pp. 86-87	Abstract #1 Quiz 2
4	Longleaf Pine Landscapes Landscape & Communities: Disturbance	Debbie Miller	LL Ch. 3 Graduate students only: Mugnani et al., 2019	Lecture Summary #2 with Questions Quiz 3 Graduate students: Journal Article Summary #1
5	Regeneration Ecology	Kimberly Bohn	LL Ch. 4, 5, 7 Mitchell et al., 2006	Lecture Summary #3 with Questions Quiz 4
6	A Fuels Perspective on Restoration of Long Unburned Longleaf Pine Ecosystems by Kevin Heirs Restoration Techniques and Tools by Scott Sager	Kevin Heirs Scott Sager	LL Ch. 9 Graduate students only: Varner et al., 2016	Lecture Summary #4 with Questions Quiz 5 Graduate students: Journal Article Summary #2
7	Restoration Techniques and tools <i>continued</i> Growth and Yield Modeling	Scott Sager Kimberly Bohn	LL Ch. 8 Shaw & Long, 2007	Abstract #2 Quiz 6
8	No lecture; Midterm Exam			March 2-5
9	Restoring the Understory	Johanna Freeman	LL Ch. 10 PowerPoint by Denhof Graduate students only: Wiggers et al., 2013	Lecture Summary #5 with Questions Quiz 7 Graduate students: Journal Article Summary #3

Week	Lecture Topics	Speaker(s)	Readings	Due by Monday the following week
10	Spring Break			March 11-18
11	Vertebrate Fauna of Longleaf Pine Associated Communities RCW Ecology, Status, and Management Updated Status of RCWs on Eglin AFB Gopher Tortoise Biology and Management on Eglin AFB Reticulated Flatwoods Salamander Biology and Management on Eglin AFB	Debbie Miller Kristina Witter Kathy Gault	LL Ch. 6, 11 See Discussion Thread Assignment #1	Discussion #1 Quiz 8
12	Invasive Plants of LLP Ecosystem Cogongrass in Longleaf Pine Ecosystems	Ashlynn Smith Donald Hagan	Williams & Jackson, 2007 Ewel & Putz, 2004 Hall & Hastings, 2007	Lecture Summary #6 with Questions Quiz 9
13	Case study: Deer Lake State Park	Ashlynn Smith Jeff Talbert	LL Ch. 12 PowerPoint by Gordon Ralph & Poole pp. 222-242	Discussion #2 Graduate students: Interview with Restoration Professional
14	Economics of Ecosystem Restoration	Damian Adams	LL Ch. 13	Lecture Summary #7 with Questions Quiz 10 Due April 10: Term Paper OR PowerPoint
15	Role of Public-Private Partnerships	Vernon Compton	LL Ch. 14 Compton et al., 2006	Discussion #3
16	No lecture; Final Exam			April 23-26
17	No lecture			