FOR 4110 / FOR 5159
Ecology and Restoration of the Longleaf Pine Ecosystem
(3 Credits)
Spring 2022

Instructor:
Dr. Debbie Miller
Professor
Wildlife Ecology and Conservation
5988 Hwy. 90, Bldg. 4900
Milton, FL 32583
Telephone: (850) 983-7128 (office)
(850) 240-2135 (cell)
E-mail: dlmi@ufl.edu
Preferred method of communication via email through Canvas.
Office Hours: Anytime by cell phone and email. Or, in person by appointment.

Teaching Assistant:
Gina Mangold
Office: 4803, Milton Campus
Telephone: (850) 983-7141
E-mail: gmangold@ufl.edu

Technical support: visit the helpdesk website or call 352-392-4357.

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, ownership patterns, and socioeconomic and political and policy aspects of restoration.
Course fees: $18.00

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 threads	3 @ 10 points	30
Interview a restoration professional … (Ecologist, Forester, Wildlife biologist; **FOR 5159 students only**)	1 @ 25 points	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

[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 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:

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

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

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 TESTS.

Discussion thread:
When a discussion is scheduled, you will 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) submitted too late in the week for peer response(s).

Interview a restoration professional: - Graduate Students ONLY
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 (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).

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:

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

Term Paper or Narrated PowerPoint:

Graduate students must choose the term paper option <u>(FOR5159 students).</u>
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. This is a review of the literature. It should not cover material already provided in lectures accept 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.

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

Term Paper or Narrated PowerPoint continued:

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. 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.aa.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.aa.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.

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, 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 2021 Course Schedule

Week	Lecture(s)	Speaker(s)	Readings	Due by Monday of the following week
1	Course Introduction Longleaf Introduction	Debbie Miller	LL Ch. 1, 2	Class Introductions
2	Principles of Restoration Ecology Part 1 and 2	Megan Brown	Article: Primer	Lecture Summary #1 with Questions Quiz 1
3	Introduction to Soils Part 1, 2, and 3	Ashlynn Smith	Brady & Weil, Ch. 3, pp86-87	Abstract #1 No summary Quiz 2
4	Unifying Characteristics & Variations Longleaf Landscapes Landscape & Communities Part 1 and 2	Debbie Miller	LL Ch. 3 Article: Mugnani et al.	Lecture Summary #2 with Questions Quiz 3
5	Regeneration Ecology Part 1 and 2	Kimberly Bohn	LL Ch. 4, 5, 7 Article: Silviculture that Sustains	Lecture Summary #3 with Questions Quiz 4
6	Heirs Lecture Scott Sager Lectures Part 1, 2, and 3	Kevin Hiers Scott Sager	LL Ch. 9 Article: Varner et al.	Lecture Summary #4 with Questions Quiz 5
7	Growth and Yield Modeling	Kimberly Bohn	LL Ch. 8 Article: Longleaf Density Guideline	Abstract #2 No summary Quiz 6
8	**Midterm**			**Feb 24-28**
9	Restoring the Understory, Parts 1 and 2	Johanna Freeman	LL Ch. 10 Article: Carol Denhof Additional readings in Canvas	Lecture Summary #5 with Questions Quiz 7
	Spring Break			**March 5-12**
10	Vertebrate Fauna Part 1 & 2 RCW Ecology, Status, and Management Updated Status of RCWs Gopher Tortoise Biology Reticulated Flatwoods Salamander	Debbie Miller Kristina Witter Debbie Miller & Others	LL Ch. 6, 11 Additional readings in Canvas	Discussion #1 Lecture Summary #6 with Questions Quiz 8

Week	Lecture(s)	Speaker(s)	Readings	Due by Monday of the following week
11	Invasive Plants of LLP Ecosystem Cogongrass Lecture	Ashlynn Smith Don Hagan	Williams & Jackson, 2007 Ewel & Putz, 2004 Hall & Hastings, 2007	Lecture Summary #7 with Questions Quiz 9
12	Monitoring and Evaluation Restoration Case study: Deer Lake State Park	Ashlynn Smith and Jeff Talbert	LL Ch. 12 Article: Doria Gordon Article: Putting Monitoring First	Discussion #2 Interviews Due (Graduate Students Only)
13	Economics of Ecosystem Restoration	Damian Adams	LL Ch. 13	Lecture Summary #8 with Questions Quiz 10 **Due April 10** Term Paper OR PowerPoint
14	Role of Public-Private Partnerships	Vernon Compton	LL Ch. 14 Article: Compton et al.	Discussion #3
15	No lecture			
16	**Final Exam**			**April 23-26**