

## FNR4624C *FIELD OPERATIONS FOR MANAGEMENT OF ECOSYSTEMS*

Fall 2023

**Instructor:** Mr. Scott A. Sager  
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**Class hours:** Monday 4<sup>th</sup>-9<sup>th</sup> (10:40am – 4:55pm) in Newins-Ziegler 222  
- field trips may run longer  
- overnight field trip Sunday 19/Monday 20 November

**Office hours:** As arranged, or via phone/email

**Overview:** The axe, match, cow, plow, and gun – Aldo Leopold identified these as the things that destroyed the land, but also as the tools that can be used to restore it (*Game Management*, 1933). While Leopold was focused on using these tools to restore game species specifically, the use of these tools to manage land for some combination of economic return, aesthetic/social value, and ecological services/habitat is just as valid. This course covers how these tools are used (minimal time on cows and guns) to reach some combination of these goals.

Major sections of the course include the use of heavy equipment, herbicides, and prescribed fire. Each tool and/or technique is reviewed for its application (pros and cons), regulations which govern its use, costs and contracting markets, and safety concerns. Finally, examples of the use of these tools/techniques are provided in the context of private land management (consultants), timber management, and public lands management.

This course provides broad exposure to the topic. Examples are primarily taken from the southeastern United States, but principles are more broadly applicable. Students seeking more depth can discuss their interest with the instructor, and potentially take courses such as:

- FOR3214/L *Fire Ecology and Management/Lab*
- PLS4613 *Aquatic Weed Control*
- WIS4427C *Wildlife Habitat Management*

### **Student Learning Objectives:**

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

1. Identify and describe the tools commonly used to meet specific ecosystem management objectives, and summarize their pros and cons relative to the objective; regulations governing their use; costs and contracting (including ethics); and safety issues.
2. Choose an appropriate tool/technique to reach a desired condition, given a stated current condition, and justify their choice.
3. Identify the common regulatory restrictions on operational activities, and resources available to check for new or uncommon regulations.
4. Identify the factors involved in determining prices for contracting of management activities, and discuss ways to distribute risk and avoid conflicts of interest, to produce the “best” contract form.

**Pre-Requisites:** This course is a senior-level course, intended for students who have already gained a solid understanding of how ecosystems function, as well as a basic understanding of “desired” conditions based on landowner objectives. As such, successful completion of the following coursework is required prior to enrollment:

- FOR3153C *Forest Ecology*, or equivalent (contact instructor to determine sufficiency)
- FNR3410C *Natural Resource Sampling*, WIS4945C *Wildlife Techniques*, FOR3162C *Silviculture* or equivalent (contact instructor to determine sufficiency)

### **Evaluation of Student Performance:**

- 10% Prescribed Fire Prescription – plan for the intentional use of fire to meet a specific objective, on a specific site

- 10% Timber Harvesting Prescription – plan for the removal and merchandizing of trees to meet a specific goal for a specific site
- 10% Site-Prep/Regeneration Prescription – plan for the regeneration of desirable species, and control of non-desirable ones, on a specific site
- 40% Weekly Assignments/Exercises (minimum of eight) – available via Canvas, and based on lectures and field exercise (5% of grade, each)
- 30% Final Project – for a given site and given objectives, develop a set of prescriptions (15%), and defend/justify/answer questions about those prescriptions in an oral review (15%). Typically includes a timber harvest plan, site-prep/regeneration plan, and prescribed burn plan.

**Grading Scale (points):**

		<b>A</b>	90.0-100		
<b>B+</b>	86.7-89.9	<b>B</b>	83.7-86.6	<b>B-</b>	80.0-83.6
<b>C+</b>	76.7-79.9	<b>C</b>	73.7-76.6	<b>C-</b>	70.0-73.6
<b>D+</b>	66.7-69.9	<b>D</b>	63.7-66.6	<b>D-</b>	60.0-63.6
		<b>E</b>	< 60.0		

Further information on UF grading policy can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Recognize that grades on canvas are not “official”, and are only intended to be informative. Your final grade is the exclusive decision of the instructor.

**Attendance:** To earn points for weekly assignments you must attend the lecture/field trip. Further information on UF attendance policy can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**Textbook:** All required materials will be provided. Any and all materials (including materials you identify on your own) may be used in assignments, prescriptions, and the final project. A copy of the following will be provided each student:

*Silviculture Best Management Practices*. Florida Department of Agriculture and Consumer Services, 2008.

*Florida Forestry Wildlife Best Management Practices for State Imperiled Species*. Florida Department of Agriculture and Consumer Services, 2014.

**Field labs:** In addition to providing practical familiarity with various tools, techniques, and how different landowners use them, field labs provide opportunities to interact with resource management professionals. While every effort will be made to return students to campus by 5pm on days with field labs, students should recognize that this is **only an estimate**, and schedule their activities accordingly. All trips require professional attire – long pants (jeans or slacks; not leggings), appropriate shirt, and closed-toe shoes. Any additional required equipment will be provided.

**Assignments:** No credit will be given for assignments submitted late. “Late” is defined as arriving after the prescribed date/time. All assignments are to be completed individually – reference materials may be used, but not other students.

**Final Project:** The intent of the final project is to provide an opportunity for the student to demonstrate a cumulative knowledge of the course material, as applied to meet a specific objective on a specific site. It is also intended to provide students experience defending their approach to the landowner or their supervisor (the instructor). The written prescription/documentation will describe, in clear terms, the proposed activities and tools/techniques to be used, including contracts, maps, timing, etc. (as necessary). This documentation will be “presented” in a one-on-one meeting with the instructor.

**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/honorcodes/honorcode.php>.

**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.

**Campus Helping Resources:** Students experiencing crisis 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/](http://www.counseling.ufl.edu/cwc/)

- Counseling Services
- Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Training Programs
- Community Provider Database

Career Resource Center, First Floor JWReitz Union, 352.39231601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)

**Services for Students with Disabilities:** The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes the registration of disabilities, 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.

001 Reid Hall, 352.392.8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/).

**FNR4624C FIELD OPERATIONS FOR MANAGEMENT OF ECOSYSTEMS**  
**Fall 2023 Schedule**

**Detailed Outline**

<b>Week</b>	<b>Content</b>
28 August	LECTURE – course mechanics; the basics of regulations, contracting, and safety
4 September	NO CLASS
11 September	LECTURE – heavy equipment and herbicides
18 September	LECTURE – prescribed fire
25 September	LECTURE – understory management, site preparation, competition control <i>FIELD TRIP – Bielling Site Prep, Providence; Austin Cary Forest, Fairbanks</i>
2 October	LECTURE – logging equipment <i>FIELD TRIP – Loncala Logging, Newberry</i>
9 October	LECTURE – wood products and markets <i>FIELD TRIP – West Fraser, Lake Butler</i>
16 October	LECTURE – timber sale administration
23 October	LECTURE – roads and access, water and wetland mitigation <i>FIELD TRIP – Operations Project-Austin Cary Forest, Fairbanks</i>
30 October	LECTURE – guest speakers... professional practice, ethics, work experiences
6 November	LECTURE – regeneration systems, genetics, density and spacing
13 November	LECTURE – planting mechanics <i>FIELD TRIP – Florida Forest Service Nursery, Chiefland</i>
19/20 November	<i>FIELD TRIP – Southern Forestry Consultants, Quincy... OVERNIGHT</i>
27 November	<i>FIELD TRIP – Weyerhaeuser, Lake Butler</i>
4 December	<i>FIELD TRIP – Florida Forest Service, Orange Park</i>
11-15 December	Operations Plan – individual presentations