

# Prescribed Fire Use and Impacts in the Southern U.S.

## FOR 4905: Spring 2011 (3 CREDITS)

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**Class hours:** 21-day sessions four times each year from January to April. Class is 8 hours per day, five days per week.

**Focus:** The development and perfecting of skills needed for successful and responsible use of prescribed fire in the Southeastern US, and knowledge of the roles of prescribed burning for natural resource benefits. Planning, management, and conducting of prescribed burning will be required.

**Learning Outcomes:** At the end of the course, each student will be able to:

1. Evaluate critical factors in fuels, weather, and fire behavior and their importance in fire control, use and management;
2. Demonstrate prescribed fire control, safety, planning, and operations;
3. Understand the application of monitoring and research to inform fire applications and evaluation of fire use effectiveness.

**Textbook:** Handbook/manual, "A Guide for Prescribed Fire in Southern Forests" (USDA National Wildfire Coordinating Group PMS 431-2: 1989) distributed at beginning of course session.

**Class format:** One week of in-class lecture, followed by two weeks of field trips to observe fire behavior and effects, conduct prescribed burns or field exercises, and evaluate fire results.

**Assignments and Evaluation of Student Performance (% of grade):** (Described in detail below)

1. Pre-course preparatory work (5%)
2. Ten succinct messages assignment (due before leaving FL) (15%)
3. Critical analysis paper: *See description below course outline* (60%).
4. Plan and implement prescribed burns (15%)
5. Participation (5%)

**Instructions:** Within two weeks after the end of your field session, submit the ten succinct messages and the critical analysis paper to [lkobziar@ufl.edu](mailto:lkobziar@ufl.edu).

### Grading Scale

90-93.3% A-	93.4-96.6 A	96.7-100 A+
80-83.3% B-	83.4-86.6 B	86.7-89.9 B+
70-73.3% C-	73.4-76.6 C	76.7-79.9 C+
60-63.3% D-	63.4-66.6 D	66.7-69.9 D+
Less than 60%= E (Fail)		

## COURSE OUTLINE AND TOPICS

1. Pre-class preparatory work: Students compare fuels they are familiar with to fuels being burned in the Southeast, and identify similarities and differences in fire behavior and predicted effects. This exercise helps students recognize that ecologically successful burns can be conducted across the US.
2. History of Prescribed Fire and “10 Succinct Messages”: The ecological imperative of fire in the longleaf pine ecosystem is discussed beginning with natural ignitions, pre-Columbian fire use, early European settlers and naturalists’ accounts to region-wide fire suppression and eventually to scientific validation for the use of fire for forest health.
3. Prescribed Fire Safety: Safety concerns for those familiar and new to burning in the Southeast are described.
4. Defensive Driving: Driving conditions commonly found in the Southeast are discussed including near white-outs during heavy rain, water on the road due to these heavy downpours, and “sugar” sand, as well as driving in areas with a high proportion of elderly drivers.
5. Firing Techniques: This unit emphasizes the need to select appropriate firing techniques to achieve burn plan objectives. Particular attention is given to changing firing patterns as weather and fuels change throughout the day and the burn unit.
6. Fuels and Fire Techniques Field Trips: This field trip travels into the Apalachicola National Forest with the Forest FMO to view fuels within different vegetative communities and discuss fire behavior and objectives that students may be expected to meet during fire activities. Students will also travel to Tall Timbers Research Station or the Joseph W. Jones Ecological Research Center at Ichauway, where burning conducted by non-government institutions is described.
7. Smoke Management and Air Quality: This unit focuses on why and how to manage and mitigate smoke from prescribed burns as well as safety concerns related to smoke for the general public and the fire crew member.
8. Prescribed Fire Burn Plans: Special emphasis is put on objective setting and conducting fire operations to follow the burn plans. Plans used by different entities are discussed before participants go on live fire operations during the remainder of the session.
9. Prescribed Fire Monitoring: Qualitative and quantitative monitoring methods are discussed as well as identifying key variables to monitor based on objectives.
10. Live Fire Operations: Participants experience up to 10 - 12 days of hands-on burning in wildland urban interface, a variety of fuel types, and for a variety of management objectives, expanding their prescribed fire qualification through the NWCG prescribed fire task book documentation process.

\*\*\*\*\*Critical Analysis Paper\*\*\*\*\*

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Students will prepare type-written evaluations of five different experiences from the course. We expect correct grammar, punctuation, and spelling and will deduct points for mistakes. Be sure to proofread your paper. Please also utilize the list of references at the end of this syllabus, and access these or other literature sources. You **MUST** include at least **three references** (e.g. “(Wade et al. 2007)”) in the body of your text, and **cite the references completely** (see examples below) at the end of your paper in an accepted bibliographic format. We expect that 5-8 pages will be necessary to address these topics adequately. The topical areas that **must** be covered include:

1. **The history of prescribed fire use:** How does the history of fire use in the US influence our ability to use fire? How does it impact public support for burning? How do you suggest we improve public perception as well as political support for fire use? Describe what you learned from your experiences burning in the south.
  2. **Burn plan writing and preparation:** a critical analysis of successes and challenges you encountered, and how you will deal with those challenges at your home unit. How do managers prepare for burns in the south? How does this differ from what you’re accustomed to? What would you recommend be done differently?
  3. **Monitoring of fire effects** in a burned area (preferably one the student actively participated in burning), including impacts on soils, wildlife, understory/overstory vegetation, and fuels. What can be gained from monitoring fire effects? How should results from monitoring be incorporated in future plans for prescribed fire use? What is most important to monitor, and why? How long should monitoring be continued?
- **Two additional topics of your own choosing (e.g. fire and climate change, fire and wildlife, ignition techniques, fire policy, air quality, smoke management, or any other topic you find interesting!)**

Please describe how and what you learned, and how this knowledge will be applied to your own professional experiences at your home locations.

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**Useful Websites and References:**

Southern Fire Exchange: <http://www.southernfireexchange.org/>

Fire Effects Information System: <http://www.fs.fed.us/database/feis/>

Fire management/ behavior analysis and monitoring software: <http://www.fire.org/>

Fire news: [www.wildfirenews.com](http://www.wildfirenews.com)

FIREWISE: <http://www.firewise.org/>

Florida Division of Forestry (weather, drought index, etc): <http://www.fl-dof.com/wildfire/index.html>

National Interagency Fire Center: <http://www.nifc.gov/information.html>

Tall Timbers Research Center: <http://www.ttrs.org/>

USFS – Fire: <http://www.fs.fed.us/fire/>

USFS - Southern Research Station, Interface South: [www.interfacesouth.org](http://www.interfacesouth.org)

USFS - Southern Appalachian Forest Ecosystems [www.forestryencyclopedia.net](http://www.forestryencyclopedia.net)

Research in fire science and fire ecology—Joint Fire Science Program, <http://jfsp.nifc.gov/>

- Agee, J.K. 1993. *Fire ecology of Pacific Northwest forests*. Island Press, Washington, D.C. 493 p.
- Biswell, H.H. 1989. *Prescribed burning in California wildlands vegetation management*. University of California Press, Berkeley. 255 p.
- DeBano, L.F., D.G. Neary, P.F. Ffolliott. 1998. *Fire's effects on ecosystems*. J. Wiley, NY.
- Johnson, E.A. and K. Miyanishi (eds.). 2001. *Forest fires: Behavior and ecological effects*. Academic Press, San Diego, CA. 594 p.
- Myers, Ronald L. 2006. *Living with fire – sustaining ecosystems and livelihoods through integrated fire management*. The Nature Conservancy. Tallahassee, FL. 28 p.
- Pyne, Stephen: numerous books, take your pick!
- Wade, Dale, and Hugh Mobley. 2007. *Managing smoke at the wildland-urban interface*. Gen. Tech. Rep. SRS-103. Asheville, NC. U.S. Dept. of Ag, Forest Service, Southern Res. Stn. 28 p.
- USDA and USDO. 2006. *Interagency Prescribed Fire: planning and implementation reference guide*. NIFC. Boise, ID. 50 p.
- Whelan, R.J. 1995. *The ecology of fire*. Cambridge University Press, Cambridge. 346 p.

### Other information:

- \* The “succinct messages” assignment is DUE at the end of the course. The “experiences” assignment must be submitted on-line at the course website by the end of two weeks following the last day of the course. Papers lose 3% of their total possible score for every 24 hours past the due date/time.
- \* We expect student participation and interest in the class to be at least as high as that of the instructors. As this course is largely experience-based, engaged participation is essential.

**Academic Honesty:** In 1995 the UF student body enacted a new honor code and voluntarily committed itself to the highest standards of honesty and integrity. By enrolling at the University, and in this course, you commit yourself to that standard. The honor code, in part, states “On all work submitted for credit by students at the university, the following pledge is either required or implied: ‘On my honor, I have neither given nor received unauthorized aid in doing this assignment.’” Failure to comply with this commitment may result in disciplinary actions up to and including failing this course and expulsion from the University.

### UF Counseling Services:

Students experiencing crisis or personal problems that interfere with their general well being are encouraged to utilize the University’s counseling resources. Both the Counseling Center and Student Mental Health provide confidential counseling services at no cost for currently enrolled students. Resources are available on-campus for students having personal problems or lacking clear career and academic goals, which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall (next to Criser Hall), 392-1575, personal and career counseling; [www.counsel.ufl.edu](http://www.counsel.ufl.edu)
2. Student Mental Health Services, Student Health Care Center (2<sup>nd</sup> floor, Student Health Services, Infirmary), 392-1171, personal counseling; <http://shcc.ufl.edu/smhs/>
3. Center for Sexual Assault/Abuse Recovery & Education (CARE), Student Health Care Center, Infirmary Rm 245, 392-1161, ext 4362, sexual assault counseling; and self help information tab at [www.counsel.ufl.edu](http://www.counsel.ufl.edu)
4. Career Resource Center, Reitz Union, 1<sup>st</sup> floor, 392-1601; career development assistance, counseling; <http://www.crc.ufl.edu/> .

**Students with Disabilities Act:**

The Dean of Students Office 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. *Dean of Students Office*, 202 Peabody Hall, 392-8565, [www.dso.ufl.edu](http://www.dso.ufl.edu).

**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.