
FOR 3214: FIRE ECOLOGY & MANAGEMENT LECTURE

SCHOOL OF FOREST RESOURCES & CONSERVATION
UNIVERSITY OF FLORIDA
SPRING 2019

INSTRUCTORS

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HELP SESSIONS: BY APPOINTMENT

Credits: 2

Prerequisites: FOR 3153C or PCB 3034C or PCB 4044C, or the equivalent

Class Hours: Friday, periods 2-3 (8:30-10:25am), MCCB 3096

COURSE DESCRIPTION & LEARNING OBJECTIVES

Course Description

Detailed study of the role, occurrence and function of wildland fires in natural ecosystems and the use of prescribed burning to simulate those functions. Key topics include factors that influence natural fires, effects of fires on the environment, management and control of wildfires, and the use of prescribed burning. Students [in the lab section] will plan and conduct several prescribed burns.

Course Learning Objectives

The basic objective of this course is to understand the principles, concepts, and issues surrounding fire, and to integrate this information into the context of natural resource management, protection, and stewardship. At the end of this class, you should be able to:

- *Analyze* fire as a physical process, including the chemistry and dynamics of fire
- *Understand* fire as an ecological process, including effects on plants, animals, soil, water and air
- *Identify* social and political forces that affect the use of fire, and how they can be incorporated into land management decisions

General Course Overview

Fire is one of the most important natural disturbances in terrestrial and coastal ecosystems, affecting a complex network of biological communities as well as ecological processes. Many fire ecology and management topics draw from biological disciplines including ecology, evolution, biogeography, wildlife biology, as well as physical sciences such as physics, chemistry, meteorology, geology, and soil science. These scientific disciplines are combined with social sciences such as anthropology, economics, political science, and sociology. Fire has the potential to affect practitioners and stake-holders including businesses, governmental agencies, private organizations and land owners, scientists, and the public. Furthermore, restoration advocates from these diverse groups work together to advance science, educate laymen, and affect policy with respect to using fire to promote biodiversity and ecosystem functioning.

EVALUATION OF STUDENT PERFORMANCE

Distribution of Grades

- 40% Exams
- 30% Assignments
- 15% Quizzes
- 15% In-class activities

Grading Scale (no rounding)

<u>Percentage</u>	<u>Grade</u>	<u>Percentage</u>	<u>Grade</u>
100-93	A	76-73	C
92-90	A-	72-70	C-
89-87	B+	69-67	D+
86-83	B	66-63	D
82-80	B-	62-60	D-
79-77	C+	59-0	F

For information on current UF policies for assigning grade points, see:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Brief Overview of Major Assignments (additional details and grading rubrics will be provided on Canvas)

Exams

There will be two comprehensive exams composed of a combination of multiple choice, short answer, labeling, and essay questions.

Assignments

There will be seven assignments due **Thursday by 5pm**. Complete assignment instructions and grading rubrics are available on Canvas.

Quizzes

There will also be four 30-minute online quizzes due **Thursday by 5pm**.

In-class activities

Inquiry-based exercises will be periodically completed in class. These exercises will be short, but require you to reach conclusions through problem solving, evaluation of scenarios, and case studies.

NOTE: To earn credit for in-class activities and quizzes, you must be present in class. If you have reason to miss a class, you must contact your instructor **prior** to the class. Acceptable excuses are determined at your instructor's discretion. Late assignments will be graded, but receive a zero.

Policy on Late Work

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policy and can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Required course readings

Waldrop, T.A., and S.L. Goodrick, editors. 2012. Introduction to Prescribed Fire in Southern Ecosystems. U.S. Department of Agriculture Forest Service, Southern Research Station, Asheville. Available at: http://www.srs.fs.usda.gov/pubs/su/su_srs054.pdf
Selected peer-reviewed papers and news articles will be posted on Canvas (see individual modules on Canvas).

Informative Websites: Fire in the Southeastern U.S.

[America's Longleaf](#)
[Achbold Biological Station](#)
[Disney Wilderness Preserve](#)
[Florida Forest Service](#) (weather, drought index, etc.)
[InterfaceSouth](#)
[Jones Research Center](#)
[Longleaf Alliance](#)
[Ordway Swisher Biological Station](#)
[Southeastern Fire Ecology Partnership](#)
[Southeastern Region National Cohesive Wildland Fire Strategy](#)
[Southern Fire Exchange](#)
[Talladega National Forest](#)
[Tall Timbers Research Center](#)
[USDA - Southern Research Station](#)

Informative Websites: Fire around the world

[Association for Fire Ecology](#)
[Coalition of Prescribed Fire Councils, Inc.](#)
[Fire Effects Information System \(FEIS\)](#)
[Fire Research and Management Exchange System \(FRAMES\)](#)
[FIREWISE](#)
[GoodFIRES](#)
[Joint Fire Science Program](#)
[National Interagency Fire Center](#)
[National Interagency Prescribed Fire Training Center](#)
[USFS - Fire](#)

Fire-specific journals

[International Journal of Wildland Fire](#)
[Fire Ecology](#)
[Proceedings of Tall Timber Fire Ecology Conferences](#)

Many other journals publish fire-related research including, but not limited to:

[Ecology](#)
[Ecological Applications](#)
[Forest Ecology and Management](#)
[Forest Science](#)
[Journal of Forestry](#)
Southern, Western, Northern Journals of Applied Forestry
USDA Forest Service General Technical Reports, Research Notes, and Research Papers

RESOURCES TO HELP YOU SUCCEED

Course Website

The course website can be accessed on Canvas using your myUFL key. The course site will contain readings, announcements, helpful links, and important course information, as well as an online grade book.

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.

Academic Civility

Meaningful and constructive dialogue is encouraged in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. Respect for individual differences and alternative viewpoints will be maintained in this class. One's words and use of language should be temperate and within acceptable bounds of civility and decency. Friendly persuasion wins friends and influences people. Aggressively arguing your point often does the opposite and stops dialogue.

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: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

Wellness

UF Counseling and Wellness Center offers individual counseling, wellness counseling, couples counseling, problem solving help, CERC crisis services, and other assistance. For more information, visit: <http://www.counseling.ufl.edu/cwc/Default.aspx>

Students with Disabilities Act

The Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) 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.

Campus Helping 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/*
- U Matter We Care, www.umatter.ufl.edu/
- *Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/*

Student Complaints

Residential Course: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

Feedback

Student assessment of instruction is an important part of efforts to improve teaching and learning. We encourage your constructive criticism, suggestions, ideas, and other feedback for improving the course. Please refer to contact information on the first page.

Additionally, at the end of the semester, students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

LECTURE SCHEDULE

Date	Lecture Topic	Readings to be completed PRIOR to class	**Due on Thursday by 5pm**
Jan. 11	Course expectations • Introduction to fire in natural resource management		
Jan. 18	What is fire? • Why use fire? • Combustion	Waldrop & Goodrick pgs. 1-10	Assignment: Introduction on Canvas
Jan. 25	Measuring fire behavior • Ignition techniques • Fire weather basics	Waldrop & Goodrick pgs. 35-42	Quiz
Feb. 1	Test fire behavior using a matchstick forest		Communication assignment Part 1: Overview of project topic
Feb. 8	Linking weather and topography to fire behavior	Pyne <i>et al.</i> , Ch. 4 (optional); Waldrop & Goodrick, pgs. 19-34	Quiz
Feb. 15	Linking fuels to fire behavior • Fire laws • Exam review	Waldrop & Goodrick, pgs. 43-54	Assignment: Meteorology
Feb. 22	Exam 1		
Mar. 1	Introduction to fire ecology and fire regimes	Platt 1999; Putz 2003; Taylor et al. 2017	Assignment: Evaluation of case studies
Mar. 8	SPRING BREAK		
Mar. 15	Fire effects • Plants and succession	Fill et al. 2015; Kelly & Brotons 2017; Varner et al. 2009; Nowacki & Abrams 2008	Communication assignment Part 2: First draft of essay on fire management and ecology of selected habitat
Mar. 22	Fire effects • Wildlife	Hovick et al. 2017; Burkepille et al. 2016	Communication assignment Part 3: Peer review due
Mar. 29	Fire effects • Soil, water, and air	Neary et al. 2005; Waldrop & Goodrick, pgs. 12-14	Quiz
Apr. 5	Super fire regimes • Fire in deep time • Fire regimes and biomes	Bowman et al. 2009, 2011; Prior et al. 2017	Communication assignment Part 4: Final essay on fire management and ecology of selected habitat
Apr. 12	Special topics • Interacting disturbances • Salvage logging	TBA	Quiz
Apr. 19	Exam 2		

Disclaimer

I reserve the right to revise the lecture schedule and reading assignments. Scientific articles will be assigned on a weekly basis and posted on Canvas. Any updates to the lecture schedule will be posted on Canvas and you will be notified via email. Please make sure your Canvas preferences are set to receive periodic class updates.