



FOR 3214: Fire Ecology & Management

FOREST, FISHERIES, AND GEOMATICS SCIENCES
UNIVERSITY OF FLORIDA
SPRING 2025

Dr. Raelene Crandall

Pronouns: She/Her/Hers
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Thursdays 9am-noon

“If we don't burn it when we can control it, it will burn when we can't.”
-Rick Anderson

Credits: 2
Class Hours: Friday | Periods 2-3 (8:30-10:25am)
Location: 222 Newins Ziegler Hall
Prerequisites: FOR 3153C or PCB 3034C or PCB 4044C, or the equivalent

Course Goals

The 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

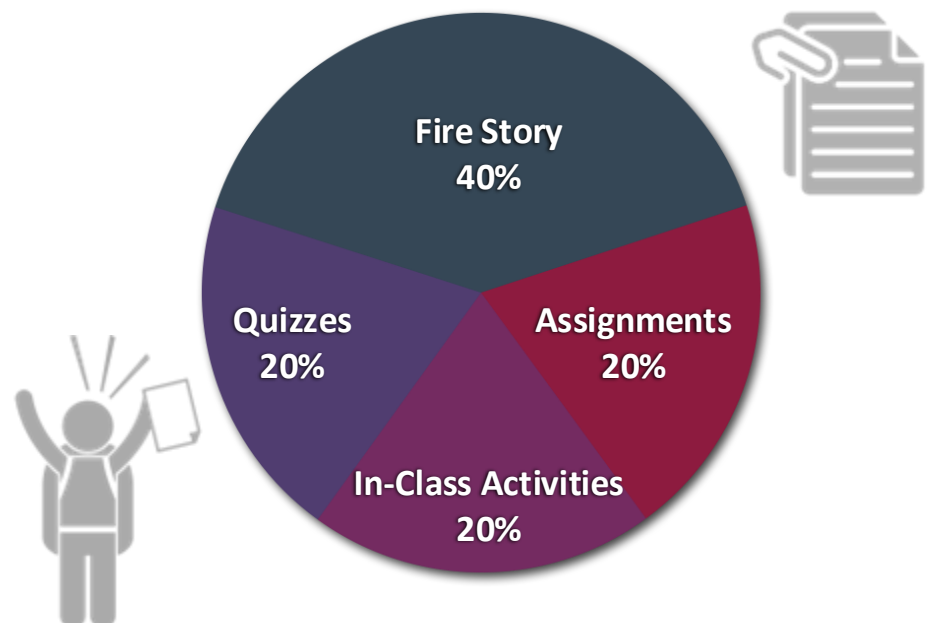
Descriptions of Assessments

Fire Story: A series of four assignments culminating in a paper that links fire ecology and management; based on peer reviewed literature.

Quizzes: 30 to 60-minute online quizzes that cover lecture material. Quizzes are posted 7 days prior to due date. The lowest quiz grade will be dropped.

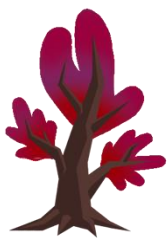
Assignments: Inquiry-based activities or Canvas discussions that complement the lectures.

In-Class Activities: In-class activities that accompany each lecture will require students to summarize information or brainstorm solutions to fire management challenges. The three lowest grades will be dropped.



A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93.9-90	89.9-87	86.9-84	83.9-80	79.9-77	76.9-74	73.9-70	69.9-67	66.9-64	63.9-61	60.90

Grades are not rounded. For information on current UF policies for assigning grade points, see: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>



Frequently Asked Questions



How will I teach?	Fridays 8:30-10:25am in 222 Newins Ziegler Hall: Attend lectures in person with opportunities for discussion and critical thinking activities. Thursdays 9am-noon in 355 Newins Ziegler Hall: Stop by during my helping hours with questions or concerns.	On Canvas: Read peer-reviewed papers and book chapters, listen to podcasts, watch videos, and complete assignments and quizzes.
How will we communicate?	Canvas announcements ONLY! Make sure you are signed up to receive Canvas updates. You will only receive emails for individual conversations.	Dr. Crandall will be in the classroom by 8am on Fridays and available to chat. Individual meetings are available upon request. Note that I am unable to have discussions immediately after the lecture because I will be rushing off to lab.
What are in-class activities?	In-class activities that accompany each lecture will require you to summarize information or brainstorm solutions to fire management challenges. They may also require you to reflect on what you have learned. These activities will help you summarize information for quizzes.	If you are not present in class, it is likely you will miss this material. Answers to in-class activities are not posted on Canvas. The lowest three in-class activity grades will be dropped.
What if you must miss a class and the in-class activity?	Review the lecture notes posted on Canvas, request notes from another student, and meet with your instructor if you have questions. If you are not present in class, you will be unable to complete and submit the in-class activities.	Do not fall behind! Communicate with your classmates, visit the class Canvas page, and turn in assignments on time. Please contact your instructor if you need to miss multiple classes. I care and want to help you succeed.
What if you must miss many classes?	PLEASE communicate with me as soon as you think you will need to miss multiple classes or assignments. We will work together to develop a plan for completing the course without undue stress.	If I notice you are falling behind or not attending class, expect an email from me. That said, you need to take the initiative and be proactive about ensuring you submit work on time or develop a plan with me.
What if you miss a due date?	Unless PRIOR arrangements have been made with your instructors, there will be a 10% grade reduction each day an assignment is late up to one week. Seven days after the due date, the submission page will lock, and a zero will be assigned. For example, if the assignment is due on the 5 th , it will be locked on the 12 th at 11:59pm.	Make-up quizzes are not available. Quiz answers are posted after the quiz closes and discussed in lecture. You will be able to drop your lowest quiz grade. Start your quiz early. Technical problems during the final hour are difficult to fix.



Learning Content & Readings



Disclaimer: The lecture topics and readings may be subject to changes, but the due dates will not be adjusted. See Canvas for a calendar of due dates.

Date	Lecture Topics	Readings to be completed PRIOR to class	Due on Sunday by 11:59pm (2 days after lecture)
Jan. 17	Course expectations • Fire in natural resource management	Syllabus Addington et al., 2005	
Jan. 24	What is fire? • Why use fire? • Combustion	Boby et al., pgs. 19-22 Waldrop & Goodrick, pgs. 1-10	■ Assignment: Introduction on Canvas
Jan. 31	Measuring fire behavior • Ignition techniques	Boby et al., pgs. 179-199 Waldrop & Goodrick, pgs. 35-42	■ Assignment: Of Bombs and Butterflies
Feb. 7	Climate and weather	Boby et al., pgs. 65, 111-128 Pyne et al., Ch. 4 (optional) Waldrop & Goodrick, pgs. 19-34 Waldrop & Goodrick, pgs. 43-53	■ Quiz 1
Feb. 14	Climate and weather	Boby et al., pgs. 65, 111-128 Pyne et al., Ch. 4 (optional) Waldrop & Goodrick, pgs. 19-34 Waldrop & Goodrick, pgs. 43-53	■ Fire Story Part 1: Overview of Project
Feb. 21	Aspect and topography • Fuels and fuel management	Boby et al., pgs. 157-176; 182-183 Prior et al., 2017	■ Quiz 2 ■ Assignment: Fire Weather
Feb. 28	Fire laws	Boby et al., pgs. 55-57 Cary & Lowdermilk, 2022 Smith et al., 2018	■ Assignment: Evaluation of Case Studies
Mar. 7	Matchstick forest		■ Quiz 3 ■ Fire Story Part 2: Draft of Paper
Mar. 14	Introduction to fire ecology • Populations, communities, and landscapes	Platt, 1999	
Mar. 21	SPRING BREAK		
Mar. 28	Fire adaptations • Tree mortality	Boby et al., pgs. 91-102 Varner et al., 2009	■ Quiz 4
Apr. 4	Plants and succession • Vegetation-fire feedback	Fill et al., 2015 Hess & Tschinkel, 2017	■ Fire Story Part 3: Peer Reviews
Apr. 11	Wildlife management	Hovick et al., 2017 Stephens et al., 2019	■ Quiz 5 ■ Assignment: Fire is for the Birds
Apr. 18	Super fire regimes • Fire in deep time	Bowman et al., 2011	■ Fire Story Part 4: Final Paper ■ Quiz 6

Checklist of Assessments & Due Dates



Fire Story (40%)

- | | |
|--|-------------|
| <input type="checkbox"/> Overview of project topic | February 16 |
| <input type="checkbox"/> Draft of paper | March 9 |
| <input type="checkbox"/> Two detailed peer reviews | April 6 |
| <input type="checkbox"/> Final version of paper | April 20 |



Quizzes (20%)

- | | |
|---------------------------------|-------------|
| <input type="checkbox"/> Quiz 1 | February 9 |
| <input type="checkbox"/> Quiz 2 | February 23 |
| <input type="checkbox"/> Quiz 3 | March 9 |
| <input type="checkbox"/> Quiz 4 | March 30 |
| <input type="checkbox"/> Quiz 5 | April 13 |
| <input type="checkbox"/> Quiz 6 | April 20 |



Assignments (20%)

- | | |
|---|-------------|
| <input type="checkbox"/> Introduction on Canvas | January 26 |
| <input type="checkbox"/> Of Bombs and Butterflies | February 2 |
| <input type="checkbox"/> Fire Weather | February 23 |
| <input type="checkbox"/> Evaluation of Case Studies | March 2 |
| <input type="checkbox"/> Fire is for the Birds | April 13 |

In-Class Activities (20%): Due by end of lecture period



- | | |
|--|-------------|
| <input type="checkbox"/> Lecture Worksheet | January 17 |
| <input type="checkbox"/> Lecture Worksheet | January 24 |
| <input type="checkbox"/> Lecture Worksheet | January 31 |
| <input type="checkbox"/> Lecture Worksheet | February 7 |
| <input type="checkbox"/> Lecture Worksheet | February 14 |
| <input type="checkbox"/> Lecture Worksheet | February 21 |
| <input type="checkbox"/> Lecture Worksheet | February 28 |
| <input type="checkbox"/> Matchstick Forest | March 7 |
| <input type="checkbox"/> Lecture Worksheet | March 14 |
| <input type="checkbox"/> Lecture Worksheet | March 28 |
| <input type="checkbox"/> Lecture Worksheet | March 4 |
| <input type="checkbox"/> Lecture Worksheet | April 11 |
| <input type="checkbox"/> Lecture Worksheet | April 18 |

Required Readings



Boby, L., et al. 2023. *Guidebook for Prescribed Burning in the Southern Region*. UGA Cooperative Extension Bulletin 1560 | WSFNR-23-16A. Available at: https://sref.info/resources/publications/guidebook-for-prescribed-burning-in-the-southern-region/at_download/file

Waldrop, T.A., and S.L. Goodrick, editors. 2012 (slightly revised 2018). *Introduction to Prescribed Fire in Southern Ecosystems*. U.S. Department of Agriculture Forest Service, Southern Research Station, Asheville. Available at: https://www.srs.fs.usda.gov/pubs/su/su_srs054.pdf

Selected peer-reviewed papers, news articles, podcasts, and videos will be posted in individual modules on Canvas.



Resources to Help You Succeed

Policies & Requirements

This course plan and syllabus are subject to change in response to student and instructor needs. Any changes will be communicated in advance through Canvas.

Diversity & Inclusion

Although natural resources and their management are important to all humans on Earth, modern natural resource management was built on a small subset of voices. This is why integrating a diverse set of experiences is important for a more comprehensive understanding of natural resource science and management. We acknowledge that it is possible that there may be both overt and covert biases in the material due to the lens with which it was written, even though the material is primarily of a scientific nature. We will strive to address these issues by including material from diverse perspectives when possible and by creating a classroom environment conducive to respectful, professional communication.

Just as in any professional environment, meaningful and constructive dialogue is expected 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 at all times 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.

Inclusive Learning Environment

This course embraces the University of Florida's Non-Discrimination Policy, which reads,

The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.

Course Logistics & Requirements

Students may access lectures, assignments, readings, and supporting materials through the course Canvas site as they become available.

Technology Requirements:

- A computer or mobile device with high-speed internet connection.
- A webcam, headset and/or microphone, and speakers.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. [What browser am I using?](#)
- Installation of proctoring software may be required and will be provided if so.

Synchronous online sessions may be recorded. By sharing your video, screen, or audio during any synchronous online class sessions, you are consenting to being recorded for the benefit of students who cannot attend live as well as for class review during the current semester. If you have special circumstances or concerns about privacy, it is your responsibility to discuss it with your instructor.

Communication Courtesy & Professionalism

Just as in any professional environment, meaningful and constructive dialogue is expected 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 always be maintained in this class. All members of the class are expected to follow rules of common courtesy, decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points and/or referral to the Dean of Students Office.

Late Submissions & Make-up Requests

It is the responsibility of the student to access online lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course. Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:

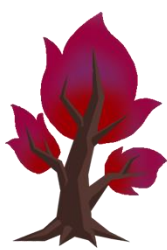
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

Student Helping Resources

- For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course or contact the UF Help Desk at: Learning-support@ufl.edu | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu> | <https://helpdesk.ufl.edu/>
- SFFGS Academic Hub <https://ufl.instructure.com/courses/303721>
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.



More Resources to Help You Succeed

As a student at the University of Florida, you have committed yourself to upholding 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."

Academic Honesty Policy

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). It is your 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.

For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

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, disability.ufl.edu

UF/IFAS Field and Fork Food Pantry

The Pantry (<http://pantry.fieldandfork.ufl.edu>) is a resource on the University of Florida campus committed to eradicate food insecurity. Food insecurity is not having a reliable access to nutritious foods for yourself on a regular basis. If you, or anyone you know is experiencing food insecurity, the Pantry is a resource to visit. We offer non-perishable food, toiletries and fresh vegetables grown at the Field and Fork Gardens to provide a well-balanced diet. Protecting the privacy of its guests and providing food to those in need within our campus community is our priority. Our guests do not need any proof of need to use this resource, all that is needed is a Gator 1 ID to prove you are a current Student, Faculty or Staff at the University of Florida.

Student Life, Wellness, and Counseling Help

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.

- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- Career Resource Center <http://www.crc.ufl.edu/>
- GatorWell Health Promotion Services <https://gatorwell.ufsa.ufl.edu/>

Student assessment of instruction is an important part of efforts to improve teaching and learning.

Semester Evaluation Process

At approximately the mid-point of the semester, the School of Forest, Fisheries, & Geomatics Sciences will request anonymous feedback on student satisfaction with various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

At the end of the semester, 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 professionally and respectfully 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/>.

Student Complaint Process

The School of Forest, Fisheries, & Geomatics Sciences cares about your experience and we will make every effort to address course concerns. We request that our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered. You can also submit feedback anytime.

If you have a more urgent concern, your first point of contact should be the Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to the UF administration:

- Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.
- On-Line Students Complaints: View the Distance Learning Student Complaint Process.

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.