

EBIO 4100 Forest and Fire Ecology Course Syllabus

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Course Term: Summer 2026, July 27th (Monday) - Aug 8th (Saturday) 7am-5pm. Students may travel late on Saturday (after class ends at 5pm) or on Sunday August 9th. There will be one day off mid-course on Sunday.

Course Summary

Forest and Fire Ecology covers the role of fire in fire-adapted western US forests at the scales of individual trees, communities, and ecosystems. Students will learn the essentials of different fire regimes and associated fire behavior across the elevational range of the Southern Rocky Mountains through lectures, field trips, lab exercises, and student-led projects. The class will also critically examine current management practices to reduce the negative effects of fires on communities and ecosystems. On field trips we will visit both historic and recent burned areas, learning field methods to reconstruct fire history (tree rings analyses) and assess past fire history through forest stand structure. Students will also learn basics of GIS and remote sensing used in studying forest and fire ecology. Students will conduct projects in small groups and present the findings at the end of the course. The course will require some days of strenuous hiking on rugged terrain to reach field sites (up to 10 miles round trip in one day).

Course Objectives

By the end of this course, within the Southern Rocky Mountains, you will be able to:

1. Understand the different fire regimes and associated forests.
2. Know the field methods for reconstructing fire history and use of tree rings.
3. Understand remote sensing methods for evaluating fire severity.
4. Practice collecting field data to monitor planting of trees in burned areas.
5. Think critically about current forest management practices.
6. Learn to generate hypothesis and gather data to answer questions about current wildfires and management.
7. Work effectively under strenuous field conditions in both a small and large group.

Canvas Information

All material for the course will be posted and graded on canvas (canvas.colorado.edu). **Use the modules tab to easily work through the material by day.**

For Canvas, Passwords, or any other computer-related technical support contact the CU Boulder OIT. 303-735-4357 <https://oit.colorado.edu/> email: oithelp@colorado.edu

Reading Materials

The course does not require a textbook. We will have nightly reading assignments related to course material. These readings (.pdfs) will be posted on canvas.

Course Content

Field trip dates and locations will be confirmed as the summer approaches. Field trips will require an early departure and late return. The content will not necessarily be conducted in this order as we have to plan the fieldtrips based on weather.

Day	Topic	Location
1	Individual species traits and tree physiology	Mountain Research Station Forests Mountain Research Station Treeline
2	The operational environment	ecotone field trip/hike
3	Tree growth and fire recovery	Field trip to Rocky Mountain National Park Ouzel Burn 1978
4	Forest stand reconstruction with tree rings	Mountain Research Station and permanent plots Field trip to City of Boulder Heil Ranch
	Montane forests and forest treatments	Calwood Burn 2020
5	Forests of Colorado	Mountain Research Station
6	Other Forest Disturbances (Insects)	Mountain Research Station
7	Compound Disturbances (Insects and Fire)	Field Trip to Fern Lake and East Troublesome Burn 2020
8	Individual Projects	Mountain Research Station
9	Reforestation monitoring	Fieldtrip to Hayman 2002 wildfire
10	Fires and the Wildland Urban Interface	Field Trip to Cold Springs Fire 2016
11	Group projects	Local wildfire

Grading Components

Participation (attend all field trips) each day worth 10%	50%
Discussion Boards	30%
Individual Class Projects	10%
Group Projects	10%

Participation

This course requires active engagement and curiosity. Most of the learning will take place in the field and will demand your active participation.

Individual Class Projects

We will do a number of in-class projects that use data and Google Earth Engine and other software tools to look at wildfires. Each student will present their findings to the class.

Additionally, students will present material related to field trips for a specific wildfire. Students must present findings from published scientific research that took place within the fire as well as present general background material on the subject. Presentations should be 10-15 minutes long and will occur in the field.

Discussion Boards

We will have Discussion topics to get to know the material more deeply. Discussions are 30% of your final grade and are equally weighted. Each discussion is worth 15 points. Discussion boards are meant to help us get to know each other and learn additional information. Discussion topics will relate to readings, course material, and group projects and must be individual work.

Grading for discussion posts will be based on the completeness of your post to the prompts and the proper use of grammar and punctuation. I am not grading your responses based on word length. Please provide concise, meaningful, and grammatically correct posts.

Group Project

We will conduct a group project on the last full day of class in a local wildfire. Students will work in two groups to design research questions and data collection, conduct group field data collection, and present the results at the end of the day.

Course Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

Course Policies

Students are expected to participate and complete work on time. The progressive nature of the class material makes keeping up to date indispensable.

All writing submitted for grading purposes must be proofread for spelling and grammar. All work must be original. Plagiarism or cheating in any form will be reported and a failing mark will be assigned.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

Department of Geography Code of Conduct

In the Department of Geography, instructors strive to create an atmosphere of mutual trust and respect in which learning, debate, and intellectual growth can thrive. Creating this atmosphere requires that instructors and students work to achieve a classroom in which learning is not disrupted. At the most basic level, this means that everyone attend class, be prepared with readings and assignments, and that students pay attention. This means no conversations with friends, reading the newspaper, coming late, or leaving early. Such behavior is disruptive to the instructor and to your fellow classmates. These basics of classroom etiquette are an important means of building and showing mutual respect. Inevitably, however, disagreements will arise. Sometimes these disagreements will be about content, sometimes about grades or course procedures, and sometimes they will be about the treatment of participants in the class. In order to facilitate the resolution of these disagreements, the following guidelines should be followed by everyone:

All interactions must be guided by mutual respect and trust. If you are bothered by some aspect of the class, identify what is bothering you and center discussion on that issue. Address issues that concern you early. Problems are easier to resolve early on.

Consider whether it is best to address your concerns in class or in a separate appointment with the instructor. Remember, behavior that disrupts your fellow classmates is not acceptable. Abusive speech or behavior will not be tolerated in any interaction between students or between student and instructor. If an instructor feels that your speech or behavior is abusive, you will be asked to leave the room. If you believe an instructor has become abusive, you may leave the room and talk with the department chairperson. Debate and discussion can continue when all parties proceed with mutual respect. If mutual respect cannot be restored, either you or the instructor may take the issue to the department chairperson or the Campus Ombuds' Office.

Inclusivity Statement

CU Boulder acknowledges that racism, classism, ableism, homophobia, transphobia, sexism, casteism, and other forms of oppression exist on our campus and impact the learning environment of our students. This department also recognizes that our diversity can deepen our understanding of one another and the world around us, rather than divide us. All races/ethnicities, genders and gender identities, religions, ages, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities are welcome here.

Building an inclusive environment where all students can share their rich array of perspectives and experiences is key to the learning experience at CU Boulder. For our class to be successful, everyone

should feel they can contribute and learn in a supportive environment. Each and every voice in the classroom is important and brings with it a wealth of experiences, values, and beliefs. To the extent that we each bring forward our unique and full selves, we will deepen the learning for ourselves and each other. Each of us shares the responsibility for making our classroom and the university a positive and better place to live, work, and learn and, as such, we will treat every individual with respect, dignity, and civility. In the time we share together over the semester, please honor the uniqueness of your fellow classmates, and appreciate the opportunity we have to learn from each other. There is zero tolerance for racist, sexist, homophobic, xenophobic, or other discriminatory language or exclusionary behavior on our campus. If you feel a sense of isolation from the CU Boulder community or if you need any specific accommodations, please speak with the instructor early in the semester about your concerns and what we can do to support you.

Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, intimate partner abuse (including dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#).

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, we do not formally meet at a specific time, and weekly assignments are at your own pace and timing discretion, so if a religious holiday occurs during a week, students have time built into the weekly schedule to finish course work on non-holiday parts of the week. In the event of an extenuating circumstance, students will contact the instructor at the beginning of the semester to work out an accommodation.

See the [campus policy regarding religious observances](#) for full details.