

Fire Ecology

NRM 3301

Spring 2024

Instructor:

Dr. Rob Kinucan

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Lecture: TR 9:30 -10:45 a.m., RAS 128

Office hours: MW 10:00-12:00 and by appointment

Course description:

The study of fire in range and forest ecosystems, including history of fire, climate factors associated with fire, vegetation response, evolution of ecosystems with fire, prescribed burning as a management tool, including planning, implementation, and safety.

Textbook:

No text is required.

Learning objectives:

1. Students will be able to define the process of combustion and identify and explain the factors that affect the process in a wildland situation.
2. Students will be able to describe the effect of fire on ecosystems and understand situations where fire is an appropriate management tool.
3. Students will be able to apply fire safely to an area with a defined burn plan.

Student Learning Outcomes for the B.S. in Natural Resource Management:

1. Students will be able to identify species of wildland plants and wildlife common to the western United States and describe their natural history.
2. Students will be able to demonstrate knowledge of the elements of an ecosystem.
3. Students will be able to communicate about natural resources and conservation both verbally and in writing.

Marketable Skills for B.S. in Natural Resource Management:

1. Students will demonstrate public speaking skills.
2. Students will demonstrate writing skills.
3. Students will be able to apply course knowledge through a research project.

Academic Integrity:

Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused, with meaningful and pertinent participation. Examples of academic dishonesty include, but are not limited to, turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when

collaboration is forbidden.

ADA Statement:

Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact Counseling and Accessibility Services, Ferguson Hall, Room 112; Mailing address: P.O. Box C-122, Sul Ross State University, Alpine, Texas; Telephone: 432-837-8203; More resources can be found at:

<https://www.sulross.edu/counseling-and-accessibility-services/>

Class Organization:

1. Participation is an important criterion in determining how much you learn and how well you do in class and will be considered when assigning a final grade. Attendance will be monitored by participation.
2. Fire professionals will be conducting fire training that meets the requirements for the course component of the Texas Prescribed Burning Board's Prescribed Burn Course. This workshop will take place February 27, 28 and 29, at Kokernot Lodge and is an integral and required component of the Fire Ecology course. Workshops will take place from 8:00 a.m. until 5:00 p.m. each day. The course costs approximately \$200 per student and serves in lieu of a course textbook. You will receive a registration and payment form at the beginning of the semester. The burn course will include access to all workshop materials.
3. We will take advantage of prescribed burning opportunities as they arise, and I expect you to avail yourselves of these opportunities. Prescriptions for burning are predicated on weather, burn restrictions, and the availability of human resources. Timing can often be at the last minute, and we will need to be flexible to take advantage of these openings.
4. I expect you to do your own work for individual projects and to contribute an appropriate share of work in group projects.
5. If you miss a class, you may obtain notes from a willing classmate. Handouts, and assignments may be obtained from me.
6. As appropriate, be prepared for outside work and wear appropriate clothing as field opportunities arise.
7. We will stick as closely as we can to the class schedule and outline. Conditions sometime require modifications to these timelines, and I will notify you in advance of any changes.

Grades:

Prescribed Burn Workshop (exam grade)	100 points
Prescribed Burn/Plan	100 points
Fire in Other Lands Group Presentation	100 points
Fire Ecology Paper	100 points
Comprehensive Examination	100 points
Total	500 points

Grade assignments: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F

Texas Prescribed Burning Board's Prescribed Burn Course:

This workshop will take place February 27, 28 and 29, at Kokernot Lodge. This fire training meets the requirements for the course component of the program.

Prescribed Burn/Plan:

You will work in small groups to prepare a prescribed burn plan for a ranch or property following the Prescribed Burn Alliance of Texas (PBAT) protocol. If conditions allow you will conduct a prescribed burn based upon this plan.

Fire in Other Lands Presentation:

You will work in small groups to review fire in an assigned country and give a presentation to the class. More details can be found under course documents in Blackboard.

Fire Ecology Paper:

This assignment is to help you gain a deeper understanding of fire ecology for a specific ecosystem. More details can be found under course documents in Blackboard.

Examination:

A mixed format (essay, short answer, multiple choice) open note exam that covers all materials addressed throughout the course.

Class meetings and tentative topical outline:

Week of:	Lecture (Tues)	Lecture (Thurs)
Jan -/18		Introduction – course overview
Jan 23/25	Introduction – overview of fire and use	Introduction – overview of fire and use
Jan 30/Feb 1	Introduction – overview of fire and use	Fire environment
Feb 6/8	Fire environment	Fire environment
Feb 13/15	Fire environment	Fire adaptations
Feb 20/22	Fire adaptations	Fire behavior
Feb 27/29	Ray Hinnant Prescribed burning workshop – Note, the workshop will take place all day for three days, beginning Tuesday, Feb 27 through Thursday, Feb 29. See syllabus for details.	Ray Hinnant Prescribed burning workshop – Note, the workshop will take place all day for three days, beginning Tuesday, Feb 27 through Thursday, Feb 29. See syllabus for details. See syllabus for details.
Mar 5/7	Fire and soils/Fire and hydrology	Fire Ecology paper due, submitted in Bb
Mar 12/14	Spring Break	Spring Break
Mar 19/21	Fire and Animals	Fire and culture/Fire regimens
Mar 26/28	Fire regimens	Fire regimens
April 1/4	Fire regimens	Spring CDE (online assignment)
April 9/11	Fire regimens	Fire regimens
April 16/18	Fire in other lands Group presentations	Fire in other lands Group presentations
April 23/25	Fire in other lands Group presentations	Climate change and fire ecology
Apr 30	Exam	