

# BIOL410 / BIOL810P: Fire Ecology & Management in Grasslands

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Department of Biology, University of Nebraska-Kearney

**Course Credits:** 1

**Course Delivery:** Online - Asynchronous

## Course Overview

Familiarizes students with the role of fire as a major ecosystem process in grasslands and its use as a management tool. Per the [UNK Graduate Course Catalog](#).

## Course Learning Objectives

At the completion of this course, you will be able to

1. Use common wildland fire terminology to describe key characteristics of fuels, weather, and topography contributing to fire behavior in wildland environments, with particular emphasis on grasslands.
2. Recognize adaptations of plant and animal species driving grassland community and ecosystem responses to fire.
3. Identify characteristics of fire as a key disturbance in grasslands.
4. Recognize how prescribed fire can be used as a management tool to maintain and restore grasslands.

## Instructor

Dr. Jayne Jonas, UNK Department of Biology, [jonasj@unk.edu](mailto:jonasj@unk.edu), office: 308.865.8224

### Office hours – Zoom link available in Canvas

Mondays 1 PM – 3 PM and Wednesdays 8 AM – 9 AM Central Time, or by appointment.

I will be available in Zoom each week during the times listed above. Please take advantage of office hours to check-in or ask any questions you might have. If 2 or more students are in the Zoom session at the same time, I will rotate through student questions in the order in which they joined. We may go into a breakout session to discuss grades or any private matters. I also have in-person office hours during these times, so there may be times I need to rotate between Zoom and on-campus students.

## Important University Dates

- First day of the session: August 26, 2024
- Labor Day (no classes): September 2, 2024
- Last day to withdraw: October 4, 2024
- Last day of the session: October 20, 2024
- See the [UNK Academic Calendar](#) for other important University dates

## Required Texts and Materials

- There is no required textbook for this course.
- Some required and optional materials may be provided via the Library Reserves or require accessing via Library citation finder (requires signing in with UNK student credentials).
- Any other course materials (required or optional) will be posted for download or linked in Canvas.

## Required Technology

- As an online course completed in 8 weeks, access to an **up-to-date computer** and frequently checking [Canvas](#) is required – at least several times per week though checking in daily is encouraged. Use of an obsolete computer operating system may hinder functionality of both Canvas.
  - All quizzes should be completed from a computer browser. Issues may arise if using the Canvas mobile app or browser on a mobile device to complete quizzes.
- Ability to use search engines (for example, [Google Scholar](#) or [the Calvin Library search engine](#)) to locate scholarly works is expected of graduate students. If you are not already comfortable with this, I encourage you to reach out to me or the [Natural Sciences Librarian](#) at Calvin Library for assistance.
- You may need to use a word processing software, such as Microsoft Word or [Google Docs](#).
  - [Microsoft 365](#) software is available to UNK students for free download.
  - Familiarity with spreadsheet programs such as Microsoft Excel or Google Sheets may be helpful.
- For issues with Canvas or other technologies associated with your university account, please contact the [University technology help desk](#).

## Course Organization

There are 8 content modules assigned over 8 weeks. As a 1-credit course completed in 8 instructional weeks, it is expected that an average student achieving an average grade will spend [at least 6 - 8 hours per week on this course](#).

Each module consists of module learning objectives, a set of short lectures, assigned readings, and any other assigned learning materials, as well as assessments. One module will be covered each week (Monday 12:01 am CT to Sunday 11:59 pm CT). Specific assignments and due dates

are listed separately in the Course Schedule. All materials will be listed, posted, or linked in Canvas and due dates/times are in Central Daylight Time.

## Participation

Engagement in the course is key to how much you get out of it. I encourage you to spend at least a little time each day with course material or activities though I recognize this is not always possible. Because the course will be completed in eight weeks, you will be expected to participate in the course at least three times throughout each week.

## Communication

Please check the Course Announcements in Canvas and your UNK email frequently. These are the primary ways I will communicate with you about any changes, updates, and reminders.

Please feel free to reach out to me at any time. I am available via Canvas messages (preferred), email, or office phone. I will respond by email or through Canvas as quickly as possible, usually within 24-48 hours depending on the type of question and depth of response required. If sending an email or leaving a voicemail, please be sure to include the course name or number in the subject (email) or message (voicemail) so I can prioritize responding to it.

## Course Assessments

All work is assigned individually to all students and due by 11:59 PM Central Time on the date listed in Canvas and on the Course Schedule, unless otherwise indicated. If there is a discrepancy between the course schedule and Canvas, dates in the course schedule take precedence.

Students are responsible for all material covered, even for assignments that are missed or for which the score is dropped. Adjustments to assessments and point values may be made if deemed necessary by the instructor; students will be notified as soon as possible of any changes.

## Discussion

Weekly discussions provide students an opportunity to critically examine a peer-reviewed scientific study and discuss how concepts presented that week apply to it. Importantly, they also allow students to support one another in learning. Students are expected to uphold UNK Values and any other principles of community identified by your group to establish the discussion board as a supportive and inclusive learning space.

*Discussion participation:* You are expected to compose at least **three posts** for each discussion (more are encouraged!): one in direct response to a discussion prompt on or before **Thursday** and a response to two other students on or before **Sunday** of the assigned week. The grading rubric and information regarding expectations for discussion participation are available in Canvas. Participation in each discussion is worth 10 points. Each week will have a discussion except module 7 when you are working on your peer-review. There will be 7 discussions, the lowest 1 discussion score will be dropped (i.e., 6 will count toward the semester grade).

I will follow discussions throughout each module. However, being cognizant that students will be posting at different times during the week and to avoid steering discussion too much, I will

generally limit my contributions to areas in need of immediate attention. A summary of each group's discussion for review by all students in the course will be posted to the corresponding Discussion Recap page by the discussion leader following the end of that discussion.

**Discussion leading:** Each BIOL810 student in the course will be assigned **one module to lead discussion (30 points)**. You are expected to also participate in and will receive a separate participation grade for the discussion you are assigned to lead. See the Discussion Leading Assignment in Canvas for complete instructions, expectations, schedule, and grading rubric.

Materials are due to be posted to the discussion board by the discussion leader no later than 11:59 PM Central Time on Wednesday of the assigned module. At the conclusion of the module, the leader will write a summary highlighting the main points the group discussed for each question and post it to the Discussion Recap page of the corresponding module by 11:59 PM CT on the last Monday of the module.

### Literature Review project

Throughout the semester, you will research the ecology or management of fire in a grassland system based primarily on published scientific literature leading to completion of a literature review paper.

**Assignments:** There will be three during the first four weeks of the course. Instructor feedback on these assignments should be used to aid in preparing your literature review paper. **These assignments are worth more points for students in BIOL810 as they are expected to consider the topic of each in greater depth.**

**Peer review:** Each student will read and provide a constructive peer-review of one other students' literature review paper by the end of Module 7; guidelines and expectations for the peer-review are available on Canvas. **The peer-review is worth more points for students in BIOL810 as they are expected to provide a more rigorous review.**

**Literature review paper:** The completed paper is due by the end of Module 6. Upon receiving instructor and peer feedback by the end of Module 7, students will have the opportunity to submit a revision due Friday of week 8. Both submissions will be graded to the same standard. If a revision is not submitted, the percent score from the initial paper submission will be assigned as the revision score. The literature review paper submission takes the place of a comprehensive final exam. **The paper is worth more points for students in BIOL810 as they are expected to demonstrate greater breadth and depth of understanding and reference a larger set of peer-reviewed resources.** Guidelines and rubrics are available in Canvas.

### Quizzes

There will be a 15-point quiz related to the learning objectives of each module. Quizzes are to be completed by each student independently (i.e., no collaboration with others). Quizzes may require students to refer to tables in the text or other materials provided in the module and may include simple calculations requiring a calculator or spreadsheet.

Weekly quizzes must be completed by or before 11:59 PM CT each **Saturday**. Quizzes are open book/note (no proctor needed), students will not be able to stop then resume once

started. Once started, students will have 25 minutes to complete each quiz. Students will have **two attempts** to take each quiz; the highest score will be graded. Of the 8 module quizzes, the lowest 2 scores will be dropped (i.e., 6 scores will contribute to the semester grade).

**Important note:** Canvas quizzes should be completed from a computer browser. Issues may arise when using the Canvas mobile app or browser on a mobile device for quizzes.

### BIOL810 Student Expectations

In addition to the requirements for students enrolled in BIOL410, those registered in BIOL810 will also be expected to prepare and lead at least one module discussion. In addition, graduate students are expected to demonstrate greater breadth and depth of understanding in the literature review project.

### Basis for final grade

<i>Assessments and point distribution*</i>	<i>BIOL410</i>		<i>BIOL810</i>	
	Points	%	Points	%
<b>Module discussions</b>	<b>60</b>	<b>20%</b>	<b>90</b>	<b>20%</b>
Participation (7 @ 10 points each, 1 dropped)	60		60	
Leading (1 @ 25 points each)	n/a		30	
<b>Quizzes/Exams</b>	<b>90</b>	<b>30%</b>	<b>90</b>	<b>20%</b>
Quizzes (8 @ 15 points each, 1 dropped)	90		90	
<b>Literature Review project</b>	<b>150</b>	<b>50%</b>	<b>270</b>	<b>60%</b>
Assignments (3)	45		60	
Peer-review (1)	15		30	
Paper first submission	30		60	
Paper final submission	60		120	
<b>Total</b>	<b>300</b>	<b>100 %</b>	<b>450</b>	<b>100%</b>

\*Adjustments may be made as deemed necessary by the instructor

**BIOL410:** Final letter grades will be assigned based on total earned points as a percentage of the total possible as follows:

A+: 97 - 100%	B+: 87 - < 90%	C+: 77 - < 80%	D+: 67 - < 70%
A: 94 - < 97%	B: 84 - < 87%	C: 74 - < 77%	D: 64 - < 67%
A-: 90 - < 94%	B-: 80 - < 84%	C-: 70 - < 74%	D-: 60 - < 64%
			F: < 60%

**BIOL810:** Final letter grades will be assigned based on total earned points as a percentage of the total possible as follows:

<b>A:</b> 90 - 100%	<b>C:</b> 70 - < 80%	<b>F:</b> < 60%
<b>B:</b> 80 - < 90%	<b>D:</b> 60 - < 70%	

## Course Policies

### Grading Policy

I take my role as your instructor very seriously; I care about how well you do in this course and that you have a challenging and rewarding experience. It is my commitment to you to respond individually to the work you submit and return your work promptly. I will make every effort to return your work within one week. If grading will take longer than the times listed here, I will keep you informed of my progress and return your work as soon as I can.

If you think there was a grading error or do not understand the feedback you receive on graded work, please contact me as soon as possible. If you would like me to regrade any or all of an assessment, requests should be made within three days after the graded work has been returned to you. Regrade requests may result in a lower grade.

Accommodations for cases in which an end of semester grade percentage falls within 0.50% of the next highest letter grade must be requested by the student by 8 AM CT on the day after final course grades are posted in Canvas. I will take participation and engagement throughout the semester into consideration in deciding whether to make a final grade accommodation. When granted, course letter grade accommodations will result in a half-letter increase (for example, an 89.51% would be an A- for an accommodated student). Accommodations will not be considered for semester grade percentages more than 0.50% from the next letter grade.

**Plagiarism:** It is of utmost importance in this course to understand and avoid plagiarism. Writing discussion posts and the literature review paper are core features of this course. TurnItIn may be used for assignments submitted in Canvas. For more information and tips, please visit the TurnItIn's webpage "[Preventing Plagiarism when Writing](#)" or reach out to me for guidance. If you plagiarize in your submitted work, you could lose credit for the plagiarized work, fail the assignment, or fail the course. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed in accordance with the [UNK Academic Integrity policy](#).

### Late Work Policy

As a student enrolled in this course, one of your responsibilities is to submit course work on time. I also recognize there may be times when you are unable to complete or submit these tasks by their due dates, so one discussion participation and two quiz scores will be dropped. Canvas automatically adjusts your course grade throughout the semester to reflect dropping the lowest value at a given time.

I encourage you to submit assignments for up to 4 days after they are due for partial credit. These assignments will receive a one letter grade deduction (10% of points possible) for each day late unless prior arrangements have been made or if there are documented professional or extenuating circumstances (e.g., family emergency, participation in University-sanctioned activities, religious observation, etc.). Please contact me as soon as possible with questions. Grading late work may take longer than the times described under Grading Policy. If you have submitted work late and it has not been returned within two weeks, please let me know to make sure I am aware it was submitted.

## Extra Credit Policy

Extra credit opportunities may be provided at the discretion of the instructor.

## University Policies and Resources

All students at the University of Nebraska at Kearney should be aware of the following university-wide course policies and resources.

### Final Exam Policy

The final exam will be administered in the time period scheduled during finals week in accordance with University policy ([Final Exam Schedule](#)). More information about UNK's Finals Week Policy, including when it is appropriate to ask for special accommodations to move a course's final exam, can be found here: [Finals Week Policy](#).

### Academic Honesty Policy

Academic honesty is essential to the existence and integrity of an institution of higher education. The responsibility for maintaining that integrity is shared by all members of the academic community. To further serve this end, the University of Nebraska at Kearney has a policy relating to academic integrity. You can find the [Graduate Academic Integrity Policy](#) online.

### Attendance Policy

Your instructor may have indicated on their syllabus an attendance policy specific to their class. If so, that is the policy with which you must comply. If no other policy is stated, the University-wide attendance policy will apply. You can find the [Student Attendance Policy Statement online](#).

### Reporting Student Sexual Harassment, Sexual Violence or Sexual Assault

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes they may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

- **Local Domestic Violence, Sexual Assault Advocacy Agency** 308-237-2599
- **Campus Police (or Security)** 308-865-8911
- **Title IX Coordinator** 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

### Students with Disabilities

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for

Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email [unkdso@unk.edu](mailto:unkdso@unk.edu)

### **Students Who are Pregnant**

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact the Student Health office at 308.865.8218. The following links provide information for students and faculty regarding pregnancy rights. <https://thepregnantscholar.org/title-ix-basics/>

<https://nwlc.org/resource/faq-pregnant-and-parenting-college-graduate-students-rights/>

### **UNK Statement of Diversity & Inclusion**

UNK stands in solidarity and unity with our students of color, our Latinx and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>

### Tentative Course Schedule

Week	Topic	Assignment(s)
1	Introduction to Fire and Fire Behavior	<ul style="list-style-type: none"> <li>• Project Assign. 1: Grassland system selection</li> <li>• Discussion</li> <li>• Quiz</li> </ul>
2	Grassland plant adaptations to fire	<ul style="list-style-type: none"> <li>• Project Assign. 2: Plants and their relationship with fire</li> <li>• Discussion</li> <li>• Quiz</li> </ul>
3	Grassland animal adaptations to fire	<ul style="list-style-type: none"> <li>• Project Assign. 3: Animals and their relationship with fire</li> <li>• Discussion</li> <li>• Quiz</li> </ul>
4	Fire as a disturbance in grasslands	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Quiz</li> </ul>
5	Effects of fire on grassland community dynamics	<ul style="list-style-type: none"> <li>• Discussion</li> <li>• Quiz</li> </ul>
6	Effects of fire on grassland ecosystem processes	<ul style="list-style-type: none"> <li>• Project Assign. 4: Paper</li> <li>• Discussion</li> <li>• Quiz</li> </ul>
7	Prescribed fire as a grassland management and restoration tool	<ul style="list-style-type: none"> <li>• Project Assign. 5: Peer-Review</li> <li>• Quiz</li> </ul>
8	The future of fire in grasslands	<ul style="list-style-type: none"> <li>• Project Assign. 6: Revision</li> <li>• Discussion</li> <li>• Quiz</li> </ul>