Environmental Studies 400  
Science and Practice of Prescribed Fire  
1 credit Summer 2018

Instructor: Dr. Paul H. Zedler, Professor of Environmental Studies; Associate Director for Research and Education, Nelson Institute for Environmental Studies; Senior Scientist, UW-Madison Arboretum

Associate Instructor: Craig Maier, MS, Coordinator, Tallgrass Prairie and Oak Savanna Fire Science Consortium, Nelson Institute for Environmental Studies/Joint Fire Science Program
- Email: craig.maier@wisc.edu
- Office hours: Tuesdays 11 am to Noon and 1-2 pm, 115b Science Hall; or online by appointment

Meeting Time and Location
All class meetings will begin/end at 4208 Helen C. White Hall, UW-Madison

Three mornings (9 am – 1 pm) will be spent in the field at conservation areas. One field trip (July 26th) will utilize online resources designed as a virtual field trip.

1 credit (45 course hours over approximately 5 calendar weeks)

4 Tuesday class room sessions 10-11 am (4 course hours)

4 field trips - 9 am to 1 pm – 3.5 hours, allows for 1.5 hours driving per trip

Students have site-specific video instruction and readings prior to each field trip. Students will complete a 1 page reflection paper following the first 3 field trips. Final 3 page writing assignment due August 14.

OFFICIAL COURSE DESCRIPTION
What does it mean to “manage a fire-adapted ecosystem”? We will explore this question through interactions with people who are dedicated to the work of conserving, restoring, and managing tallgrass prairie, oak ecosystems, and wetland communities; these are key habitats in southern Wisconsin and the Midwest which require frequent fire to prevent their replacement by shrublands and forest.

Course activities emphasize online learning and outdoor learning experience. Field trips will explore conservation lands and facilitate learning from the people—many professionals, and in
some cases volunteers—responsible for planning and implementing prescribed fires for objectives that vary due to landowner objectives and site characteristics.

This course will help prepare students for future paths such as careers in natural resource management or ecological research, while strengthening your sense of place in southern Wisconsin and the Midwest.

The course will address both social and ecological issues that influence prescribed fire, including air quality, risk to property, public policy, rare species conservation, wildlife management, sustainable forestry, ecosystem protection and management, climate change, and traditional ecological knowledge.

**Requisites**
None

**Course fees**
None

**LEARNING OUTCOMES**

**Course Learning Outcomes**

The overall objective of this course is to provide students with the opportunity to receive a field learning experience around prescribed fire practice and research activities in Wisconsin, directly applicable to the upper Midwest and north central USA, and relevant across grassland/savanna systems of the world.

All students who take this course will understand:

- the principles, practices, and challenges associated with prescribed fire in tallgrass prairie and oak ecosystems in the north central United States
- how prescribed fire affects vegetation and wildlife, both directly and indirectly
- the elements required in a prescribed burn plan and why these are needed to support safe and ecologically-effective burns
- additional coursework or training needed to pursue a career in fire ecology or management of fire-adapted ecosystems in the north central United States
- the linkages between fire ecology theory and research AND the application of prescribed fire in altered/degraded ecosystems

All students who take this course will synthesize knowledge obtained from reading and video assignments and observations and discussions in the field.
Reading and video ([www.tposfirescience.org/es-400-readings](http://www.tposfirescience.org/es-400-readings))

For July 19

Required

How to Perform a Prescribed Burn – video series from Iowa State University Forestry Extension (9 videos in this series; total viewing time less than 1 hour)


Suggested


For July 26


Virtual field trip:


Watch the intro video, then “Take a Field Walk”; there are 4 field walks to explore (see thumbnails at the bottom of the screen)

For August 2


For August 9


GRADING

**Attendance** on the field trip(s) as well as class sessions is mandatory for course credit, unless prior arrangements are made with the instructor.

**Participation (50%)**: Students will be expected to actively participate in discussion and question/answer dialogue during class and field visits. The following participation guidelines are meant to clarify expectations and scoring:

- **Outstanding Contributor**: Contributions in class reflect exceptional preparation. Ideas offered are always substantive, provide one or more major insights as well as direction for the class. Challenges are well substantiated and persuasively presented. If this person were not a member of the class, the quality of discussion would be diminished markedly. (Outstanding contributors will receive full credit = 100%)

- **Good Contributor**: Contributions in class reflect thorough preparation. Ideas offered are usually substantive, provide good insights and sometimes direction for the class. Challenges are well substantiated and often persuasive. If this person were not a member of the class, the quality of discussion would be diminished. (Good contributors will receive a score of 90%)

- **Adequate Contributor**: Contributions in class reflect satisfactory preparation. Ideas offered are sometimes substantive, provide generally useful insights but seldom offer a new direction for the discussion. Challenges are sometimes presented, fairly well substantiated, and are sometimes persuasive. If this person were not a member of the class, the quality of discussion would be diminished somewhat. (Adequate contributors will receive a score of 80%)

- **Non-Participant**: This person says little or nothing in class. Hence, there is not an adequate basis for evaluation. If this person were not a member of the class, the quality of discussion would not be changed. (Non-participants will receive a score of 50%)

- **Unsatisfactory Contributor**: Contributions in class reflect inadequate preparation. Ideas offered are seldom substantive, provide few if any insights and never a constructive direction for the class. Integrative comments and effective challenges are absent. If this person were not a member of the class, valuable air-time would be saved. (Unsatisfactory contributors will receive a score of 50%)

**Note**: Graduate Students will be evaluated on the originality of their participation. In this case, “originality” means that graduate level students are expected to go beyond individual readings and field experiences and synthesize concepts to demonstrate their understanding of the interrelated systems (economic, agronomic, ecological) inherent to managed grazing.

**Reflection papers (24%)**: All students will be responsible for three 1 page papers summarizing their observations from the first 3 field trips (including the July 26 virtual field trip). For the July 19 and August 2 field trips, student reflection papers will include 2 questions developed for the field trip hosts. These questions should: be based on the week’s reading or video assignments; and serve to clarify the students understanding of fire ecology or how the land manager translates science or tacit knowledge into action. Reflection papers are due at 5 p.m. on the Monday following each field trip.

**Final Writing Assignment (36%)**: Students will prepare three separate articles, each approximately 1 page long. Each article will focus on a separate topic related to prescribed fire, and each will be written for an audience that is important to the student (the student can select
between 1 and 3 audiences; students will preface each article with 2 to 4 sentences describing key characteristics of the selected audience).

In all areas of grading, students will be critically assessed on their attainment of these learning goals (as also summarized in the Course Description, above):

- development of a basic understanding of the principles and practices of fire ecology and prescribed fire management
- recognition of the principles, practices, and challenges associated with prescribed fire in tallgrass prairie and oak ecosystems in the north central United States
- ability to describe how prescribed fire effects vegetation and wildlife, both directly and indirectly
- recognition of the elements required in a prescribed burn plan and understanding why these elements are needed to support safe and ecologically-effective burns
- ability to engage and discuss with land managers the linkages between fire ecology and the application of prescribed fire

**Final Letter Grades:** Will be based upon the weighted score of participation, reflection papers, and final writing assignment.

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**RULES, RIGHTS & RESPONSIBILITIES**

- See the Guide’s [Rules, Rights and Responsibilities](#)

**ACADEMIC INTEGRITY**

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to [studentconduct.wiscweb.wisc.edu/academic-integrity/](http://studentconduct.wiscweb.wisc.edu/academic-integrity/).

**ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

**McBurney Disability Resource Center syllabus statement:** “The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to
identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.”  http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php

DIVERSITY & INCLUSION

Institutional statement on diversity: “Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.”  https://diversity.wisc.edu/