

SYLLABUS - FORESTRY 324  
FIRE MANAGEMENT & ECOLOGY  
Spring 2023

**General Course Information:**

Lecture: 8:00a - 8:50a Tues., TNR-352

Lab Section-1: 10:00a - 11:50a Thursday, TNR-300

Lab Section-2: 1:00p - 2:50p Thursday, TNR-354

Instructor: Dr. Michael Tiller

Office: TNR-367

Office Hours: Tues, 2:00-4:00p, or by appointment

Office Telephone: 715-346-2153

Email: [mtiller@uwsp.edu](mailto:mtiller@uwsp.edu)

Prerequisites: NRES 250 & 251; Note: this means that it will be assumed you understand the basics of botany and soil science.

Textbook:

Pyne, S. J., P. L. Andrews, and R. D. Laven. 1996. Introduction to Wildland fire 2<sup>ND</sup> Edition. Wiley & Sons, New York. 769 pp.

**Course Objectives:**

My overall objective is for you to learn foundational knowledge related to fire ecology and prescribed burning, primarily fire effects on ecosystems.

Learning Outcomes: Students are expected to

- 1) learn the many disciplines related to fire management;
- 2) acquire the background, tools, and understanding to effectively plan basic prescribed burns;
- 3) demonstrate a broad understanding of fire effects on vegetation, soils, invertebrates, and nutrient cycling in forest ecosystems;
- 4) acquire a foundational understanding of the roles that fire plays in terrestrial ecosystems.

To meet learning outcome #2, the student will learn how to 1) inventory fuels, 2) evaluate a community for prescribed burning, 3) write a prescribed burn plan, and 4) assess the advantages and disadvantages of the common ignition patterns.

**Course Philosophy and Approach:**

My philosophy is that learning is a shared experience; it is not a one-way transfer of information. We must each shoulder our responsibilities for you to be successful.

A. Lecture: Specific lectures and related material will be provided for each week in Canvas. If you know, understand, and can analyze the content in the lectures, you will do well on the exams.

B. Lab: For each topic, you will be given a handout that lists the specific objectives for the topic and an outline that lists the major sub-topics.

B1. *Assignments.* Lab assignments will be given throughout the semester which will determine 20% of your grade; thus, they should be given an appropriate level of attention and thought. **Each person is expected to write his/her own answers.**

B2. *Burn Plan*. **This is the most important task and outcome of the course.** It will draw on, and integrate, many of the topics we cover in lecture and lab. You need to start as early as you can, stay on top of the associated content [organization is going to be very important] and plan ahead.

The course will be posted on Canvas and organized by week. Each week there will be a module containing the PowerPoint(s), handouts, and outlines used in lecture and lab. The numbering of the modules is based on the week of the semester and corresponds to the week # in the schedule below. **Please note**, that the schedule may be subject to change given we may have the opportunity to observe a prescribed fire. As many of you know, prescribed burns are dictated by weather conditions and opportunities may vary from week to week.

### LECTURE/LAB SCHEDULE, TOPICS & READINGS:

FOR 324		Fire Management and Ecology Lecture/Lab Schedule	
Week	Lec/Lab Date	Lecture/Lab Topic	Reading Assignment
1	24-Jan	Scope of fire management	Pyne et al. 1996 (Pyne) - Chap 8: 405-419
	26-Jan	Lab: Fuel properties/combustion	Pyne - Chap 3: 92-102, 106-107
2	31-Jan	Fire behavior	Pyne - Chap 2: 49-56, 63-79
	<b>2-Feb</b>	Lab: Fuel classification and BEHAVE+	Pyne - Chap 3: 102-106
3	7-Feb	Wildland fire use - Rx and managed fire	Pyne - Chap 4: 130-154, Chap 10: 554-566
	9-Feb	Lab: Fire Weather and smoke management	Pyne - Chap 10: 538-554
4	14-Feb	Wildland fire use - regulations	
	16-Feb	Lab: Fire prescriptions and complexity	
5	21-Feb	Ignition patterns and firing implements	
	<b>23-Feb</b>	Lab: Burn mapping	
6	28-Feb	Fire regimes	Pyne - Chap 5: 171-180
	2-Mar	Lab: Fire History of BWCA	
7	7-Mar	Plant adaptations to fire	Pyne - Chap 5: 180-187
	<b>9-Mar</b>	Lab: FEIS and FOFEM	
8	14-Mar	<b>Exam-1</b>	
	16-Mar	No lab	
9	21-Mar	<b>Spring Break</b>	
	23-Mar		

10	28-Mar	Fire effects on flora	Brown and Smith 2000: Chap 2: 9-34
	30-Mar	Lab: Recon. for burn plan (Field)	
11	4-Apr	Fire effects on soil and water	Neary et al. 2005: Pgs. 21-27, 95-106
	6-Apr	Lab: Fuel load inventory (field)	
12	11-Apr	Fire effects on fauna, inverts, and microbes	Naery et al. 2005: Pgs. 80-91
	13-Apr	Lab: Calculate fuel loads (on your own)	
13	18-Apr	Fire Ecology - Lake States	Frelich et al. 2021
	20-Apr	Lab: Work on Rx burn plan	
14	25-Apr	Fire Ecology - Southern Forests	Glitzenstein et al. 2021
	27-Apr	Lab: Burn evaluation (Field)	
15	2-May	Fuels Management - WUI	Pyne - Chap 8: 405-410
	4-May	Lab: Work on Rx burn plan	
16	9-May	Role of fire in ecosystems	Pyne - Chap 5: 198-210
	11-May	Lab: Rx burns gone wild - why?	
17	18-May	<b>Final Exam: 10:15a-12:15p</b>	

#### Computer Lab Schedule

2-Feb Lab-1: TNR-356 10:50a-12:00p

Lab-2: CCC-307 1:45p-3:00p

23-Feb Lab-1: NFAC-126 10:00a-11:00a

Lab-1: TNR-356 10:50a-12:00p

Lab-2: SB-B228 1:00p-2:00p

Lab-2: CCC-307 1:45p-3:00p

9-Mar Lab-1: TNR-356 10:50a-12:00p

Lab-2: CCC-307 1:45p-3:00p

#### GRADE DETERMINATION

Exam #1 = 25%

Lab assignments = 20%

Prescribed burn plan = 30% **due 5/12 at 5:00 pm**

Final exam = 25% Scheduled time = 5/18, Thur., 10:15a – 12:15p

I believe in curving individual assignments and exams, if warranted, but not course grades. Course grades will be rounded to the nearest tenth and assigned as follows:

92.6% or higher = A	77.6% - 79.5% = C+
89.6% - 92.5% = A-	72.6% - 77.5% = C
87.6% - 89.5% = B+	69.6% - 72.5% = C-
82.6% - 87.5% = B	67.6% - 69.5% = D+
79.6% - 82.5% = B-	59.6% - 67.5% = D
	Less than 59.6% = F

Late assignments will be assessed a **late penalty**: **1)**  $\leq$  1 day late = 5%; **2)** 1-3 days = 10%; **3)** 3-6 days = 20%; **4)** 6-14 days = 30%, and **5)**  $>$  13 days = 40% reduction. You may turn in assignments on the due date (hard copy) or in Canvas.

### **Attendance Policy:**

I. Attendance will not be taken in lecture and no penalty will be imposed for missing a lecture; However,  $\leq$  60% of the content comes from your book, so it will greatly improve your performance by attending all lectures. Furthermore, sometimes the schedule has to be adjusted due to unforeseen circumstances and announced in lecture. You are responsible for any changes announced, even if you were not present. Such changes will also be posted in Canvas within two days.

II. **Lab attendance is strongly encouraged and is required for the two visits to the prescribed burn site.** For each unexcused absence, 2.5 points will be subtracted from your laboratory assignment average.

### **Student Responsibility**

To keep up with the readings, to get ALL notes if you miss a lecture and to turn in your assignments on time. If you have an emergency or are ill, extensions will be provided, but it is your responsibility to inform me, **in writing or by e-mail**, why you missed class. Also, if any material is not clear, YOU must let me know; I will be happy to sit down with you one-on-one and discuss it as much as you need.

### **Students with Disabilities**

The university has a legal responsibility to provide accommodations and program access as mandated by Section 504 and the Americans with Disabilities Act (ADA). The university's philosophy is to not only provide what is mandated, but also convey its genuine concern for one's total well-being. If accommodations are needed, please contact the instructor as well as the Disability Resources Center, 609 Albertson Hall (ALB)/the Library room 108 in Collins Classroom Center (CCC): phone (715) 346-3365 or email: [drc@uwsp.edu](mailto:drc@uwsp.edu).

### **Professionalism**

Students in the College of Natural Resources are pursuing courses of study that prepare them for careers as natural resources professionals. Thus, CNR students and faculty/staff are expected to exhibit conduct and attitudes appropriate to professionals. Conduct and attitudes appropriate for professionals include, but are not restricted to,

1. The UWSP Student Rights and Responsibilities are available via:  
[www.uwsp.edu/centers/rights](http://www.uwsp.edu/centers/rights)

## 2. Attitudes appropriate for resource professionals of the 21st Century:

- a. Respect for others and for their ideas;
  - b. Appreciation for ethnic and gender diversity in the workplace;
  - c. Sensitivity to environmental quality;
  - d. Adherence to professional ethics, e.g. the Society of American Foresters or Wildlife Society Code of Ethics.
- SAF Code of Ethics: <https://www.eforester.org/CodeofEthics.aspx>
  - Wildlife Society Code of Ethics: <https://wildlife.org › 20190304-Code-of-Ethics>

**Academic Integrity**

Academic integrity is central to the mission of higher education in general and UWSP in particular. Academic dishonesty (cheating, plagiarism, etc.) is taken very seriously. Don't do it! The minimum penalty for a violation of academic integrity is a failure (zero) for the assignment. For more information, see the "Student Academic Standards and Disciplinary Procedures" section of the Community Rights and Responsibilities document, UWSP Chapter 14. This can be accessed by viewing page 11 of the document at: [UWSP Chapter 14 – Academic Misconduct](#)

**Incomplete Policy**

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned under extenuating circumstances. All incomplete course assignments must be completed within deadline given by the instructor.