SYLLABUS - FORESTRY 324
FIRE MANAGEMENT & ECOLOGY
Spring, 2019

GENERAL COURSE INFO.:

Lecture: 8:00 -8:50 Tues., TNR 352
Lab Sect. 1 12:00-2:50 Wed., CNR 240
Lab Sect. 2 2:00-4:50 Thur., CNR 240
Instructor: Dr. James Cook Office: 242 CNR
Office Hours: Mon: 9-11; Tues. 10-11, 3-4; Wed: 9-10; Fri: 1-3
Foundational Understanding: **Biol 130**; **NR 250 & 251; FOR 224 or FOR 326 (or certified as Wildland Firefighter Type II).** NOTE: This mean that it will be assumed you understand the basics of botany, soil science, fire behavior and fuels.

COURSE OBJECTIVES:

My overall objective is for you to learn the foundations of prescribed burning and fire ecology, primarily fire effects on ecosystems.

Learning Outcomes: the student will 1) learn many of the management uses of fire, 2) acquire the background, tools and understanding to effectively plan a prescribed burn, 3) be able to demonstrate a broad understanding of fire effects on vegetation, soils, invertebrates and nutrient cycling in forest ecosystems, and 4) acquire a foundational understanding of the roles that fire plays in terrestrial ecosystems.

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

COURSE PHILOSOPHY & APPROACH:

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

A. Lecture: Specific **'Learning Ojbectives'** are provided for each major Unit (there are 7) in CANVAS. If you know, understand, and can analyze the content of all objectives, 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.* There are a number of periodic assignments associated with the labs. These collectively determine one-quarter of your grade; THUS, they should be given an appropriate level of attention and thought. You may discuss the general topic with your classmates; however, **each person is expected to write his/her own answers**. If two or more people turn in the same answer(s), this is considered academic misconduct. See the Student Rights & Responsibities section below for more information.

B2. *Burn Plan*. T**his 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. Examples from previous years will be provided.

Text: Pyne, S. J., P. L. Andrews and R. D. Laven. 1996. Introduction to wildland fire. 2nd. Edit. Wiley & Sons, New York. 769 pp.

NOTE!! CANVAS **is used** to provide a) learning objectives and reading assignments; b) copies of previous exams; c) powerpoints and outlines used in lecture, d) outlines and handouts for lab, and d) one way to submit assignments. Also, any schedule changes will be posted.

LECTURE/LAB SCHEDULE, TOPICS & READINGS:

Week	Lecture Date	Topic & Reading Assignment	Lab Topic	Lab Assgn.
1	1/22	Scope of fire mngt. Uses of prescr.fire–p.538-40,46-48 [H/O][1];	Fuel properties, combustion & weather (p. 96-102, 106-21)[2]	N
2	1/29	Complete 'Uses'; Begin fire behavior - p. 63-68, 85-89 [H/O]	Why a Plan? How to implement PNF	Y
3	2/5	Complete Low intensity behavior; Ignition patterns – p. 550-54 [H/O]	BEHAVE+ ➔ in computer lab	Y
4	2/12	Complete: Ignition patterns	Fuel & smoke mngt. p.405+, 554+	N
5	2/19	Use of ignition patterns in prescribed burning, Begin "Regimes"	Fire prescriptions	Y
6	2/26	Fire regimes - Components, variation, importance p. 171-80	USFS Condition Classes; Fire regimes & fire history of BWCA	Y (need calculator)
7	3/5	Plant response to fire [H/O]; p. 180-187	Effects of fire exclusion; Adaptations to fire	N
8	3/12	EXAM #1	No lab	N
9	3/26	Forest understory response	Burn evaluation in field *	N
10	4/2	Fire effects- hydrology + soil physical p. 195-96	FEIS, "FOFEM" – computer lab	Y
11	4/9	Fire effects – complete physical; begin chemical effects	Recon. For Burn Plan*	N
12	4/16	Fire effects- soil chemical	Fuel load inventory*	N
13	4/23	Fire effects-complete chem.; begin biological p. 195-96.	Calculate fuel load. Linkages in your Plan	N (calculator needed)
14	4/30	Fire effects – invertebrates & microbes [H/O]	Flex lab – either observe burn or YS fires of 1988	N

15	5/7	Long term effects of fire & role of fire in ecosystems p. 198-203	Prescribed burns gone wild – why?	N

* = we will be outside so dress accordingly
1 'H/O' signifies that a handout will be provided.
2 For lab, page numbers in the text are provided that pertain to the topic in case you want to read them; this is not a reading assignment. THIS APPLIES to LAB ONLY.

GRADE DETERMINATION

Exam #1	=	20%	
Lab assignments(5)	=	25%	
Prescr. burn plan	=	25%	**due 5/3 at 5:00 pm**
Final exam	=	30%	5/16, Thur., 2:45-4:45

I believe in curving individual assignments and exams, if warranted, but not course grades. Grades will be assigned as follows: > 92.4 = A; 89.5-92.4 = A-; 86.5-89.4 = B+; etc. Assignments which are turned in late will be assessed a **late penalty** per this schedule: 1) <= 1 day late = 5%; 2) > 1 and <= 3 days = 10%; 3) > 3 and <= 6 days = 20%; 4) > 6 and < 14 days = 30%, and 5) > 13 days, 40% reduction.

ATTENDENCE POLICIES:

I. Attendance will not be taken in lecture and no penalty will be imposed for missing a lecture; HOWEVER, <= 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 these announces will be made 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. **Attendance in LAB IS REQUIRED.** For each unexcused absence, 2.5 points will be subtracted from your laboratory assignment average.

STUDENT RESPONSIBILITY

(1) To adhere to the University Student Rights and Responsibilities. These are fully described in Chapter 14 of U.W. System/UWSP Policies. This document can be found in the Dean's office, the Reserve desk in the LRC, in each residence hall and on line at: www.uwsp.edu/admin/stuaffairs/rights/ Examples of inappropriate conduct include turning work in that was done by someone else and getting an answer on an exam from another person.

(2) 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 have to let me know; I will be happy to sit down with you one-on-one and discuss it as much as you need.