

Course Syllabus: FO 3201 and 3202
Forest Fire Laboratory and Lecture
Spring Semester 2008

Instructor: Dr. Andrew J. Londo
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Office Hours, Chat Room: Tuesday and Thursday, 4:00-5:00 PM Central Time
(Subject to Change based on instructors schedule)

Required Texts:

The following materials are required:

Fire Weather NFES 1117
Prescribed Fire Guide NFES 2109
Living on the Edge: Wildland Fire Management: a Laboratory Manual
This is available through the MSU Campus Bookstore at:
<http://msstate.bncollege.com>,
or directly through Interactive Training Media <http://WWW.ITM-Info-com>.

In addition to these materials, other materials may be required. Readings from these required and extra materials will be assigned during the course and uploaded to WebCT. **Students are responsible for all material in all assigned readings.**

Course Description:

This course covers forest fire control and use. Topics include legal issues concerning prescribed burning in Mississippi and across the South, fire weather, fire fuels, fire ecology, fire management, and the wildland/urban interface. Laboratory work will provide practical experience to build upon lecture materials. This course will cover the materials from the S-190 and S-290 NIFC courses, as well as other materials.

Objectives:

The purpose of the course is to:

- familiarize students with professional knowledge covering the protection of forests from wildfire,
- to explain the importance of the use of fire as a management tool,
- expose the student to prescribed burning techniques and burn program administration.
- Enhance students understanding of basic concepts of fire ecology

The importance of fire from historical, societal, and ecological perspectives will be presented.

The course is also designed to qualify students as Certified Prescribed Burn Managers by the State of Mississippi. There are four requirements outlined by the Mississippi Forestry Commission for students in this class to meet to become Certified Prescribed Burn Managers. They are as follows:

1. The S-290 course is incorporated into the class work and students pass the final exam used in the S-290. (The S-190 series will also be included)
2. Information on smoke management and screening for smoke sensitive and critical areas are made part of the fire course.
3. The students must pass the final exam, currently given in the Prescribed Burning Short Course offered by MSU Continuing Education, with an 80% or better.
5. The Forest Fire (FO 3202) course in the College of Forest Resources curriculum is passed with a minimum grade of "C".

Grading

Lecture

Lecture and laboratory grades will consist of the following:

- Exams (60%) (3 one-hour exams)
- Quizzes (20%) (16, ¼-hour quizzes)
- A final exam (15%) (1, one-hour final exam)
- Fire Ecology Term Paper (5%) (6 hours)

Exams will include questions from the S-290 and S-190 final exams as well as my own questions. The final exam will be the one used in the Prescribed Burning Short Course (PBSC) sponsored by the Mississippi Forestry Commission and may include my questions as well.

Quizzes will cover any material disseminated by WebCT up to that day, as well as any required readings given both prior to and for that day's quiz. Missed quizzes will be counted as a zero. The lowest quiz grade, will be dropped (not included) in determining your grade. For example, if 16 quizzes are given, only the top 15 quiz scores will count for your grade.

All written material submitted as part of the requirements for these courses, including reports and exams, will be graded for appearance, spelling, grammar and content and must be submitted via WebCT by the deadline date as a Word document. All written work must include a title page. Points will be deducted for deficiencies in style, format, completeness, and grammar. All citations are to be **done in the style of Forest Science** (examples will be provided on WebCT). The citation requirement reflects the standard for professional foresters.

Laboratory

Exercises will be provided to serve as laboratory activities. Late assignments and burn plans will be accepted, but for each day following that deadline date that they are late, 10 points will be deducted. For example if a laboratory exercise is due on a Monday in WebCT and you submit it on Thursday, the laboratory exercise will be considered to be 3 days late and have 30 points deducted.

Make Up Policy for Quizzes and Exams

There will be no makeup exams, quizzes, or laboratories without a documented excuse for illness or a family emergency. Do not wait until after the fact. An un-excused exam/quiz absence will result in a grade of zero (0) for that exam/quiz.

Academic Dishonesty

The Honor Code adopted by the students of the College of Forest Resources states:

“I will not cheat or tolerate anyone who does”

The official code of student conduct for Mississippi State University Students can be found online at <http://www.msstate.edu/dept/audit/1207.html> and is included within WebCT. Several examples are listed that illustrate what is considered to be academic misconduct. These include using aids during exams, plagiarism, submitting other classmates work as your own, and working together in a manner prohibited by the instructor. Students caught cheating will be punished according to the University guidelines.

Prior to assignments being released for your viewing in WebCT, you must click on the Honor Code icon, read the Honor Code information, and submit that you have read, understand, and will comply with the honor code during this class.

Lecture Topics

Course Introduction and Fuels Section: (7 Lectures, 7.5 hrs)

Lecture 1: Introduction to Course, Syllabus, and Course Objectives (0.5 hr)

Lecture 2: Fire History in the South (1hr)

Lecture 3: Prescribed Burning and the Law in Mississippi (1hr)

Lecture 4: The Fire Environment (1hr)

Lecture 5: Fuel Classification (1hr)

Lecture 6: Fuel Moisture (1hr)

Lecture 7: Topographic Influences (1hr)

Exam 1. (1hr)

Fire Weather Section: (6 Lectures, 8 hrs.)

Lectures 8-13: Fire Weather (8 hrs)

Exam 2. (1hr)

Fire Ecology Section: (8 Lectures, 13.5 hrs)

Lecture 14: Introduction to Forest Ecology and Soils (2.5 hrs)

Lecture 15: Role of Fire in Natural Ecosystems (1hr)

Lecture 16: Effects of Fire on Vegetative Communities (1hr)

Lecture 17: Effects of Fire on Soil (1.5 hr)

Lecture 18: Effects of Fire on Water (1hr)

Lecture 19: Effects of Fire on Air Quality (1hr)

Lecture 20: Fire Dependent Ecosystems in North America (4hrs)

Lecture 21: Use of Fire in Forest Management (1.5 hrs)

Exam 3: (1hr)

Sixteen, 15 minutes quizzes will be dispersed randomly and required prior to starting a new lecture.

Final Exam: (1hr)

Laboratory Exercises:

Laboratory exercises will be assigned and posted on WebCT. Each exercise should require the student 3-4 hours to conduct, and write up as a report. Below are the laboratory exercises to be completed by students during the course.

1. Forest Fuels, fuel loading, fuel models
2. Fire Weather
3. Fire in the Wildland Urban Interface Exercises with Living on the Edge CDs.
4. Evaluating Homes for Fire Safety in the Wildland Urban Interface
5. Stand Hazard Rating
6. Prescribed Burn Plan Preparation.

Final Grades:

Grades for both lecture and laboratory will be based on a 10 point scale:

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

Potential Topics for Fire Papers-FO 3202-Spring 2008

Subjects must be selected by January 22 one student per subject
First Draft Due by March 7 (Last class session before Spring Break)
Final Draft due by April 25 (Last class before finals)

Below are some potential topics for your Fire Papers. Feel free to use any of the topics listed below, or you can pick a topic of your own choice. Make sure you sign up with the instructor by January 22 for a topic to write about.

Plant Species

Longleaf Pine	Jack pine	Chaparral
Loblolly Pine	Lodgepole Pine	Aspen
Slash Pine	Ponderosa Pine	Black Spruce
Shortleaf Pine	Douglas Fir	Wax Myrtle
Pitch Pine	Giant Sequoia	Big and Little Bluestem
Pitcher Plants	Beautiful Pawpaw	Wiregrass
Fire in upland hardwood management	Mountain Laurel	

Animal Species

Eastern Wild Turkey	Florida Scrub Jays	Red Cockaded Woodpecker
Northern Bobwhite Quail	Sharp-Tailed Grouse	Palmetto Kirtlands Warbler
Kirtlands Warbler	Eastern Indigo Snakes	
Gopher Tortoise	Dusky Frog	

Policy and history

Prescribed Burning Regulations	Costs of Fighting Wildfires	Chicago Fire
Wildland/Urban Interface	Mack Lake Fire	Yellowstone Fire

Issues

Smoky Bear

Peshtigo Fire

The "Big Blowup"-Fires of
1910

USFS Fire Fighting Policy

Feel free to pick one of the above topics, or discuss another topic with me.

Fee free to use any information you like. You need to use at least 5 references with no "online citations". Citations are to be listed on a separate page and do not count towards the page length requirement. **Citations are to be done in the style of Forest Science.**

Remember, each student must sign up for a paper topic by January 22, 2008 by email within WebCT. The first draft is due by March 7, 2008 and the final draft by April 25. Both drafts must be submitted via email within WebCT.

Citation Examples:

When citing publications in your papers, please follow the following format:

Appleroth, S.E. 1976. Site preparation in Sweden. *The Forestry Chronicle* 52(3):133-136

Aust, W.M., T.W. Reisinger, J.A. Burger, and B.J. Stokes. 1993. Soil physical and hydrological changes associated with logging a wet pine flat with wide-tired skidders. *Southern Journal of Applied Forestry*. 17(1):22-25.

Balmer, W.E. and N.G. Little. 1981. Site preparation methods. P 60-64 in proceedings of a symposium on Maintaining Productivity on Prepared Sites, Tippin T. (ed.). Mississippi State University, Starkville, MS.

Bartlet, R.J. 1986. Soil redox behavior. P. 179-207 in D.L Sparks (ed.) *Soil physical chemistry*. CRC Press. Boca Raton, FL.

Bernt, L.W. 1977. Soil survey of Delta County and the Hiawatha National Forest of Alger and Schoolcraft Counties, Michigan. USDA Soil conservation service and Forest Service and Michigan Agricultural Experiment Station.

Cowardin, L.M., A.J. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. *USDI Fish and Wildlife Service FWS/OBS-79-31*. 103p.

Curtis, 1964. What do you mean, "site preparation"? USDA Forest Service, Research Note INT-15. 6pgs.

Dahl, T.E., and S.C. Zoltai. 1997. Forested wetlands of North America. P. 3-18 in *Northern Forested Wetlands Ecology and Management* Trettin, C.C et al. (eds.). CRC Lewis Publishers. 486 pgs.

- Londo, A. J., M.G. Messina, and S.H. Schoenholtz. 1999. Effects of harvest intensity on soil carbon content and respiration in an East Texas bottomland hardwood forest. *Soil Science Society of America Journal*. 63(3):637-644.
- Orlander, G, Gemmel, P. and J. Hunt. 1990. Site preparation: a Swedish overview. FRDA report 105, Victoria B.C. 62p.
- Owens, K.E., D.D. Reed, A.J. Londo, A .L. Maclean, and G.D. Mroz. 1999. A comparison of Pre-European and current soil carbon storage of a forested landscape located in Upper Michigan. *Forest Ecology and Management*. 113:179-189.
- Pritchett, W.L. and R.F. Fisher. 1987. Properties and management of forest soils, 2nd ed. John Wiley and Sons, NY. 494p.
- Soil Survey Staff. 1992. Keys to soil taxonomy 5th ed. USDA Soil Conservation Service, Technical Monograph No. 19. Pocahontas Press, Blacksburgh Va.
- Sutton, R.F., T.P. Weldon and R.A. Haig. 1991a. Conventional Bracke site preparation as effective as mounding. *For. Can., Frontline: For. Res. App., Tech. Note* 1. 4p.
- Sutton, R.F. 1984. Mounding site preparation: Evaluation of jack pine outplantings. P. 66-77 in *Proc. of the Jack Pine Symposium*. Smith, C.R. et al. (eds.). Great Lakes Forestry Centre-Canadian Forestry Service. COJFRC Symposium Proceedings O-P-12.
- United States Department of the Interior. 1994. The impact of federal programs on wetlands, Vol II. A report to Congress by the Secretary of the Interior. Washington, D.C. p. 333.