

**Syllabus for Online Forest Soils Lecture- FOR 2033**  
**(Spring 2008)**

**Instructor:** Dr. Robert L. Ficklin  
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**Lecture Time and Location:** TH 11:10am to 12:30pm; Rm 209  
**(for in-class offering)** H.H. Chamberlin

**Office Hours:** 8:00 to 10:00 a.m. Tuesday and Thursday and by appointment.

**Course Objectives:** To introduce future forest resource professionals to the complex interactions between the soil resource and forest biota. Upon completion of the course, students will have a fundamental understanding of the soil as a living body, and students will be familiar with soils terminology, soil/ plant water relationships, soil properties, and soil productivity.

**Evaluation Criteria:** Three 1-hour exams (20% each)  
Final Exam (20%)  
Quizzes and Online Participation (20%)

*Note: Learning the jargon of soil science is important for the communication of ideas between and among natural resource professionals. Similarly, learning the jargon of soil science is critical for the successful completion of this course. The definitions for all soil science terms are in the glossary of Brady and Weil.*

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

UAM will no longer mail grade reports to all students. You may access your grades through Campus Connect on the UAM homepage, <http://www.uamont.edu/>. To have your grades mailed to you, complete the grade request form available in the Registrar's Office in Monticello or the Student Services offices in Crossett and McGehee.

**Prerequisite:** CHEM 1103 General Chemistry I or CHEM 1023 Introduction to Chemistry; MATH 1043 College Algebra

**Text (Required):** The Elements of the Nature and Properties of Soils, 2<sup>nd</sup> Edition; Nyle C. Brady & Ray R. Weil.

**Alternate/Equivalent Text:** The Nature and Properties of Soils, 13<sup>th</sup> Edition; Nyle C. Brady & Ray R. Weil. (Unabridged version of primary text).

**Spring Break:** March 17<sup>th</sup> to the 21<sup>st</sup>

**Final Exam:** By arrangement with instructor. Must be during final exam week.

**Students With Disabilities:**

It is the policy of the University of Arkansas--Monticello to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall Room 120; phone 870 460-1026; TDD 870 460-1626; fax 870 460-1926.

Please note that the last line would change for technical campuses to include:

McGehee: Office of Special Student Services representative on campus; phone 870 222-5360; fax 870 222-4709.

Crossett: Office of Special Student Services representative on campus; phone 870 364-6414; fax 870 364-5707.

**Professionalism:**

Students in the School of Forest Resources are pursuing courses of study that prepare them for careers as natural resources professionals. Professional education is much more than technical training and encompasses professional resource education as well as general education, social science and humanities courses. Collectively, these subjects constitute professional education.

Because the School is dedicated to professional education rather than technical training, the faculty and staff have certain expectations of themselves and of SFR students with regard to professionalism and personal conduct in their preparation for careers in the natural resource professions. Thus, SFR students and faculty are expected to exhibit conduct and attitudes appropriate to professionals.

Conduct and attitudes appropriate for professionals include, but are not restricted to,

1. The UA-M Code of Student Conduct published in the University catalog,
2. Attitudes appropriate for resource professionals of the 21<sup>st</sup> 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 Code of Ethics.

**The instructor reserves the right to reduce student grades or withdraw a student from class for unprofessional behavior.**

**Cheating and Plagiarism Requirement**

**Cheating:** The possession, receipt, use, buying or selling, or furnishing of unauthorized help while doing any of the following, but not limited to:

- assignments
- reports
- term papers
- quizzes
- tests
- providing answers
- homework (e.g., copying homework assignments and/or answers)
- use of pre-programmed calculators (e.g., formulas)

When in doubt about the acceptance of providing or getting help for the activities mentioned above, consult your instructor.

**Plagiarism:** The use of writings, concepts, or thoughts of **another**, which are specific information and not common knowledge, without acknowledging the source(s). As used above, **another** is any of the following, but not limited to:

- any person
- any text from a book, journal, magazine, or other printed material
- any electronic source (internet source, word document file, or any digital data)

Examples of common knowledge compared to specific information are:

- The sun will rise tomorrow is common knowledge.
- The sun will rise at 6:01 a.m. on 1 July 2004 (NWS 2003) is specific knowledge.
- Florida, as a retirement state, has a lot of older people is common knowledge.
- As of 2002, 2,854,838 people over the age of 65 lived in Florida (U.S. Census Bureau 2003) is specific knowledge.

Direct quotations should be indicated using quotation marks and proper acknowledgement of the source. Paraphrasing is the use of writings, concepts, or thoughts of another rephrased in your words that captures the meaning of the original author. Cite the source of paraphrases also.

Examples using quotations and paraphrasing:

**The original text from Leopold (1933) reads:** In hoofed mammals there is so far no visible evidence of any density limit except the carrying capacity of food.

**Correct direct quotation reads:** “In hoofed mammals there is so far no visible evidence of any density limit except the carrying capacity of food.” (Leopold 1933)

**Correct paraphrase reads:** Ungulates are density-dependent only in relation to forage (Leopold 1933).

**Plagiarized/incorrect quote reads:** In hoofed mammals there is so far no visible evidence of any density limit except the carrying capacity of food.

**Plagiarized/incorrect paraphrase may read:** Ungulates are density-dependent only in relation to forage.

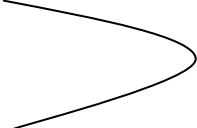
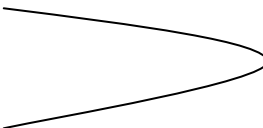
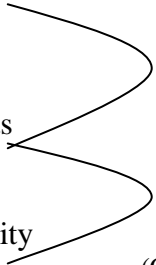
Other examples of plagiarism include, but are not limited to:

- Failing to provide a reference (attribution).
- Copying graphics and pictures from the internet without a reference (attribution).
- Paraphrasing without a reference (attribution).
- Submitting someone else's work.

When in doubt about plagiarism consult your instructor.

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**Lecture Topics:**

- |  |  |                           |
|--|--|---------------------------|
| 1. The soil as a living body                                   |    | <b>Exam I Materials</b>   |
| 2. Soil formation from parent materials                        |  |                           |
| 3. Soil classification   |  |                           |
| 4. Soil structure and physical properties                      |  |                           |
| 5. Soil and the hydrologic cycle                               |    | <b>Exam II Materials</b>  |
| 6. Soil and plant water characteristics                        |  |                           |
| 7. Soil colloid chemistry                                      |  |                           |
| 8. Soil pH and nutrient availability for plant utilization     |  | <b>Exam III Materials</b> |
| 9. Soil ecology/ biotic and abiotic interactions               |  |                           |
| 10. Soil organic matter  |  |                           |
| 11. Nitrogen, phosphorus, potassium, and micronutrients        |  |                           |
| 12. Fertility management                                       |  |                           |
| 13. Soil erosion and control                                   |  |                           |
| 14. Soil quality and relation to sustainable site productivity | <b>Final Exam</b><br>(Comprehensive)   |                           |

**Specific Learning Objectives:**

In accordance with the new outcomes-based assessment policy, all students are required to demonstrate proficiency in all core competencies in both portions of this course at least once during the semester. Failure to demonstrate proficiency in all core competencies will result in one of two options (determined by the instructor):

- 1) A course grade of "D" may be assigned regardless of overall average;
- 2) A course grade of "I" may be assigned which later can be converted to the grade earned based on course average once proficiency in all core competencies have been demonstrated. The instructor will provide additional assignments so that the student can demonstrate mastery of the core competency/ competencies that was/ were not mastered during the regular semester. The time limit for this option is 4 weeks from the date of the final examination.

Successful completion of this course is accomplished by fulfilling two sets of assessment requirements. First, a general understanding of all course materials such that 70% of all

coursework is deemed “correct” is required. Second, students must illustrate mastery of key concepts that are central to tree ecophysiology.

***Mastery of the materials is shown by successfully completing the following core competencies:***

- a) Describe the nature of different types of soil parent materials;
- b) Define the components of soil color;
- c) Demonstrate the ability to identify the Order in which a soil belongs based on a full taxonomic description;
- d) Identify soil textural classification based upon percentages of sand, silt, and clay;
- e) List the factors and processes involved with soil formation;
- f) Differentiate between 1:1 and 2:1 clay minerals on the basis of chemical structure;
- g) Describe CEC and how it relates to soil fertility;
- h) Describe the processes of mineralization and nitrification;
- i) Identify the forms of N, P, and K taken up by plants;
- j) List the plant essential macronutrients and provide examples of the role of each of the nutrients in plant physiology;
- k) Identify at least three factors that influence the decomposition of organic matter;
- l) Define the components of the Universal Soil Loss Equation.