

Syllabus

CSES 3134 – Soils in the Landscape – Spring Semester, 2007

W. Lee Daniels (Lecture)

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Office Hours: 10:30 - 12:00 T/Th

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3:00 – 4:00 T/Th

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Catalog Description

A study of soils as functional landscape components, emphasizing their physical, chemical, mineralogical, and biological properties in relation to plant growth, nutrient availability, land-use management, and soil and water quality. Primarily for FOR/FIW, LAR, and other plant/earth science related majors; May not be taken by CSES or ENSC majors. Partially duplicates 3114 and 3124. Pre: One year of introductory CHEM or BIOL or GEOL. (2H, 3L, 3C) II.

Educational Objectives

Having successfully completed this course, the students will be able to:

1. Describe the role of soils in important ecosystem functions such as carbon and nutrient cycling, water quality regulation, habitat support, etc.
2. Describe the genesis and classification of soils, and field mapping criteria commonly used in the USA and the World.
3. Relate physical, chemical, and biological properties of soils to nutrient availability, site management practices, plant growth, and productivity assessment for the range of forest, agricultural, suburban, and urban soil conditions encountered in the eastern USA.
4. Accurately describe soil properties in the field and measure appropriate soil chemical and physical properties in a laboratory setting.
5. Relate fundamental soil properties such as rooting depth, water holding capacity, and acidity to site assessment criteria to forest and/or land-use planning objectives and needs.

Grading Criteria

Final grades will be assigned based on your cumulative grade on tests and quizzes. Grades will be adjusted (curved) when necessary to conform to the regular A-B-C-D-F system.

3 Quizzes	45%
Laboratory Grade	40%
Final Exam	15%

Required Texts

Brady, N. C. and R.R. Weil. (1) *Elements of The Nature and Properties of Soils*. 2nd Ed. 2004. Prentice Hall, 606 p., and (2) *CSES 3134 Laboratory Manual*, Available from Virginia Tech Bookstore.

Class Web Site: <http://learn.vt.edu>. (Log in using your VT PID and password; look for CSES 3134 in CALS)

Soils Lab Web Site: http://soils1.cses.vt.edu/MJE/soils_in_landscape/. Any student with special needs or circumstances should feel free to meet with me during office hours.

THE HONOR CODE WILL BE STRICTLY ENFORCED IN THIS COURSE. ALL ASSIGNMENTS SUBMITTED SHALL BE CONSIDERED GRADED WORK, UNLESS OTHERWISE NOTED. ALL ASPECTS OF YOUR COURSEWORK ARE COVERED BY THE HONOR SYSTEM. ANY SUSPECTED VIOLATIONS OF THE HONOR CODE WILL BE PROMPTLY REPORTED TO THE HONOR SYSTEM. HONESTY IN YOUR ACADEMIC WORK WILL DEVELOP INTO PROFESSIONAL INTEGRITY. THE FACULTY AND STUDENTS OF VIRGINIA TECH WILL NOT TOLERATE ANY FORM OF ACADEMIC DISHONESTY.