Syllabus and Schedule

CSES 5114

Soils for Agriculture and Environmental Professionals

Matt Eick and W. Lee Daniels

Spring Term, 2007

Course Description: Characterization of soils as a natural resource emphasizing their physical, chemical, mineralogical, and biological properties in relation to nutrient availability, fertility, plant growth, land-use management, waste application, soil and water quality, and food production. Calculations used in land-use management. Pre: One year of introductory biology and chemistry.

Overall Learning Objectives:

Upon completion of the course, students will be able to:

A. Describe the genesis and classification of soils.

B. Relate physical, chemical, and biological properties of soils to nutrient and contaminant availability, site management practices, plant growth, and productivity assessment for a range of forest, agricultural, suburban and urban soil conditions found in the eastern USA.

C. Describe the role of soils in important ecosystem functions such as carbon and nutrient cycling, water-quality regulation, habitat support, etc.

D. Select proper land-use management practices that will enhance plant and animal production, prevent soil and water pollution, and/or enhance quality of life.

Getting Started: You should start by familiarizing yourself with the entire Blackboard website and the practical laboratory website linked to it. Don't look deeply into content during this overview- just glance over the pages so you know what is there. You can do this by clicking on the links on the left-hand side of the web pages.

On the **Announcements** page, you will find all of the important announcements posted throughout the semester. We will keep everyone current by posting frequent updates to this page. Blackboard will also allow you set the announcements to show up on your entry page as a default if you wish.

The course schedule page located in the **Course Information** page is your calendar. The calendar page also appears later in this file. Print this page out for reference. All of the due dates for assignments, quizzes, and exams will be here, as well as what lecture should be covered by when. On this page you will also find more information about the course, computer access issues, and other important postings.

On the **Staff Information** page you can find detailed contacts for your two instructors in this class, Matt Eick and Lee Daniels. Please use the Email addresses and phone numbers listed here to contact your instructors.

The **Course Documents** page is your link to the majority of learning materials associated with this class. On this page, you will find a link to every presentation in the course, sample tests and answer keys, and important associated "handouts". The presentations are in Macromedia Breeze format, which you should be able to open and view with most web-browsers and an up-to-date version of Flash Player. A color PDF version of the Breeze presentations will also be provided in a separate folder if you want to print out a hard copy of the presentation slides.

Important links to course-related websites are found on the **External Links** page. Of particular importance here is the 5114 Soils Laboratory link where you will find a tremendous resource of supporting information for most of our presentations.

The **Tools** page is also important. It is vital that you know and understand the contents of this page. Here you will find links that allow you to easily drop assignments to us electronically and check the class calendar. Another important feature of this page is the "My Grades" link, where you can view your current scores for the class at any time.

Software and Hardware: A reasonably fast computer capable of running the most current version of Internet Explorer (Windows, Macintosh), Netscape , Safari, Mozilla, or other recent browser. The latest version of: *Adobe Acrobat, Apple QuickTime, and Macromedia Flash* are also necessary to view the Breeze presentations, handouts and video links.

Required Text:

The Nature and Properties of Soils by Nyle C. Brady and Ray R. Weil. 13th Edition, Prentice Hall, NJ. 960 pp.

This book is absolutely required for this class. You should be able to easily acquire it from Amazon.com or other on-line book vendors. If you have difficulty getting a copy, contact your instructors and we will link you with the Virginia Tech Bookstore for assistance.

Course Schedule (weekly):

Date	Topic	Comments
Jan. 15	Course Orientation	Review syllabus and website, acquire textbook, confirm communication with instructors
Jan. 22	Chapter 1. Intro and Overview	Read chapter first and then review all Breeze Presentations. Same protocol for all subsequent weeks.
Jan. 29	Chapter 2. Parent Materials & Weathering	**Research Project Paper** assigned; details on Assignments.
Feb. 5	Chapter 3. Soil Taxonomy	
Feb. 12	Chapter 4. Physical Properties. **Problem Set 1 due**.	Problem set 1 is on soil classification; see Assignments.
Feb. 19	Chapters 5 & 6. Soil Water and **Test One on Th/Fri.** *Monday the 26th is last drop date.*	Partial coverage of Chap. 6. Test one will cover Chaps. 1-3 and will be administered via the Blackboard site. See Assignments for details.
Feb 26	Chapter 7. Aeration and Temperature Control	
Mar. 5	Chapter 8. Soil Colloids. **Problem Set 2 due.**	Problem set 2 is on physical props/water; see Assignments.
Mar. 12	Chapter 9. Soil Acidity and Liming. **Test Two on Th/Fri.**	Test two will cover Chaps. 4-7 and will be administered via the Blackboard site. See Assignments page for details.
Mar. 19	Chapter 10. Saline and Sodic soils.	**Research paper topic** must be approved by March 23.
Mar. 26	Chapter 11. Soil Biology and Organisms. **Problem Set 3 due**.	Problem set 3 is on charge, acidity and liming, see Assignments.
April 2	Chapter 12. Organic Matter. **Test 3 on Th/Fri.**	Test 3 will cover Chaps. 8-10 and will be administered via the Blackboard site. See Assignments page for details.
April 9	Chapter 13. N and S	
April 16	Chapter 14. P and K. **Problem Set 4 due**.	Problem set 4 is on litter layer and soil C calculations. See Assignments
April 23	Chapter 15. Micronutrients and Heavy Metals/Soil Contam.	Friday the 27th is last date to withdraw.
April 30	**Test 4 on Th/Fri. Project Paper due on May 1.**	Test 4 will cover Chaps. 11-15 and will be administered via the Blackboard site. See Assignments page for details.

Grading:

Four on-line multiple choice tests:	48%	(12% each)
Four problems sets:	37%	(9.25 % each)
Research Paper/Project:	15%	

Detail on all assignments and expectations can be found on the **Assignments Page**.

Course Procedures:

While this is an entirely on-line course, it is not self-paced. You must follow the weekly course schedule as posted. Therefore, it will be very important for you to complete your assigned readings, Breeze presentations, and associated supporting laboratory materials well in advance of each test date.

Your **tests** will be administered via the Blackboard website between noon Eastern Time (ET) Thursday and noon ET Saturday of each week as posted. During this 48 hour period, you will be allowed to log onto the test site once for 1.5 continuous hours to take the open book/notes examinations. Detailed instructions and log-in procedures will be posted to the **Assignments Page**.

Problem sets will be posted to the **Assignments Page** at least two weeks in advance of their due date. You must work on the problem sets by yourself without assistance from other students or colleagues. Your instructors will be available via Email or phone to assist you with questions. You may submit these assignments back to us via an Email attachment, Fax, or regular mail. We will grade them within one week and post the scores. We will return marked-up copies of your problem sets upon request and we will post answer keys.

The **Research Paper** assignment will be posted to the **Assignments Page** by late January and you will have a number of benchmark submittals associated with its development. You will choose (and we will approve) a topic of interest to you that is related to one or more of the soil science topics we will cover this term. We will also link you to literature research skills assistance from the Virginia Tech Library staff (Ms. Margaret Merrill) who will assist you with finding pertinent literature and supporting information. A sample research paper that fully meets our guidelines will be posted to the Assignments page.

Policy on Missed Deadlines:

Alternate exam dates and/or make-up assignments will be authorized only when confirmation of the conflict is provided to the instructor(s) well in advance of the due dates. Valid conflicts might include out-of-town business travel (not personal trips) and other significant work-related obligations that are pre-approved by the instructors. Personal and/or family illness issues will be handled on a case-by-case basis.

Religious/Ethnic Holidays:

We are pleased to make accommodations for anyone who will miss a (n) quiz/exam/assignment because of a religious or ethnic holiday. Please refer to the list of religious and ethnic holidays posted by the University Registrar and the ones we will honor as well.

If you wish to reschedule because of a conflict with one of these holidays, please send an E-mail note to the instructor at least one week before the due date of the assignment, tell us that you are requesting to reschedule for religious or ethnic reasons, specify the day in conflict and the holiday that you observe. We will return your message with information on making up the assignment.

When Grades Will be Posted:

Exam scores will be posted within 24 hours of the completion of the 48 hour exam block.

Problem set grades will be posted within one week of their due dates.

The project paper will be graded and posted by close of the final exam period, May 9.

Virginia Tech Honor Code: We will abide by the Virginia Tech Honor System, which is described in the current Undergraduate Catalog. **YOUR ATTENDANCE AT A TEST OR YOUR SUBMITTAL OF ANY WRITTEN OR ELECTRONIC MATERIALS SHALL BE YOUR PLEDGE THAT YOU SUBSCRIBE TO AND ACCEPT THE VIRGINIA TECH HONOR CODE AND HONOR SYSTEM.**
You are expected to:
• Do all written or electronic assignments independently and without assistance.
• Turn in all assignments on time or with a documented excuse if they are late.
• Report any Honor Code violations that you have directly observed, including cheating on exams.

On-line Constitution of the Virginia Tech Honor System (link)

Communication:

We intend to use Email as our primary tool for routine communications with you. Please send Email to the instructors for course-related questions and issues only. Our office phone numbers listed on the Staff Information page. You are encouraged to call us during our posted office hours when possible. You are also welcome to visit us in Blacksburg if you're in the neighborhood!

Some things for you to know about email:

1. It is usually relatively instantaneous but not always. *Sometimes it may take hours or even as long as a day or two for us to receive an email message*.

2. We get a lot of email. *You are important to us*, but because of the volume of mail, it may take a while for us to respond. Please be patient in getting a response.

3. Make sure we received your message if it is important to you. *Send a follow-up message if you haven't heard back in 48 hours*.

4. CALL or see us personally *if it is really important*.

Frequently Asked Questions:

How often should I check my email? Every day! We send out important information via email.

Do I need to follow the Course Schedule? YES! The course schedule is set up to help guide you through this course at a steady pace. You will fall behind if you do not keep up with it.

Do I have to listen to the audio on the Breeze presentations? It is VERY IMPORTANT that you listen to the audio. The audio contains critical information that is not on the slides or in the text. Listening to the audio helps you to learn the material better, and makes it seem more like a "class". We believe that having the supplemental audio is better than having the slides alone. You get to actually hear us explain graphs & charts, and give you examples.

I don't live in the Eastern Time zone. Are the times for taking exams and quizzes different for me? No. All times are Eastern Time (ET) and all students should conform to this time zone. For example, tests will be available for a 48 hour period from noon ET until noon ET two days later.

Is there a way that I can print out the presentations? Yes! You can download a printable PDF file of each lecture from a separate folder in the **Course Documents** section.