

# NRM 380 - SOILS AND THE ENVIRONMENT SYLLABUS

**Fall - 2003**

**Objective:** NRM 380 introduces the fundamentals of soil science. Most examples and applications will be targeted toward non-agricultural areas, but agricultural consequences also will be outlined in the text and in lecture.

**Lecture:** Monday and Wednesday 8:00-9:00 AM (Arctic Health Research Building Room 183)

**Lab:** Wednesday 2:00-5:00 PM (O'Neill Room 359)

**Text:** Brady NC, Weil RR. 2002. The Nature and Properties of Soils, 13th edition. New Jersey: Prentice Hall. An expensive text, but an excellent reference now and into the future.

**Lab Manual:** Van Veldhuizen, R., Knight, C.W., and Valentine, D. 2003. Soils and the Environment: NRM-380 Laboratory Handbook.

**Prerequisite:** Chemistry 105

Instructor	Office	Phone	E-mail	Office hours
Dr. Mingchu Zhang	O'Neill 309	474-7004	<a href="mailto:ffmz@uaf.edu">ffmz@uaf.edu</a>	MW 9:30-11:00 AM & by appointment
Mr. Bob Van Veldhuizen	O'Neill 327	474-5222	<a href="mailto:fnrsv@uaf.edu">fnrv@uaf.edu</a>	M-F 8:00-5:00

Students are expected to read, understand, and adhere to the academic honor code detailed in the [UAF Catalog](#). The University of Alaska is committed to providing equal access for students with disabilities. If you have a disability requiring special accommodations, please notify me during the first two weeks of class.

In order to save copying costs, these handouts and all lecture materials will be available through the UAF Blackboard site at <http://classes.uaf.edu>. If you cannot access these notes, please let me know.

## NRM-380 SOILS GRADING POLICY

This is a "writing-intensive" course, meaning that a majority of the 768 total points available is based on written assignments and questions. One third of the grade for weekly lab reports and 20% of the final project grade will be determined by the student's ability to write in a clear, concise and correct manner. Each student will be responsible for scheduling at least one personal conference with the instructor concerning his/her writing ability and whether he/she should seek help from the Writing Center. Individual conferences should be scheduled following the first hour exam.

Points	Basis
<b>300</b>	Hour Exams (3 @ 100 points). Questions will include true-false, multiple choice, problems, and short answer essay. Hour exams generally will not be graded for writing proficiency unless otherwise indicated.
<b>40</b>	Pop quizzes (4 @ 10 points). These unannounced quizzes are to provide an extra incentive to keep up with reading (text and lab) and class participation. Quizzes will not be graded for writing proficiency unless otherwise indicated.
<b>30</b>	Problem sets (3 @ 10 points). These are to give you familiarity with certain kinds of calculations.
<b>198</b>	Lab Reports (11 @ 18 points). Of the 14 labs, 11 will require written reports. Each will be due at the beginning of the next lab, and will be graded 67% on content and 33% on writing. After lab reports have been graded and returned, students will have one week in which they may correct errors in content and/or writing to earn credit for up to 50% of the lost points.
<b>200</b>	Final Problem (8-10 page written report in lieu of exam). The paper will be assigned and discussed in lab on November 5, and will be graded 80% on content and 20% on writing proficiency. See lab materials for details.
<b>768</b>	Total possible points

Course grade assignments		
Percentage	Total points	Grade
90-100%	691-768	A
80-89%	614-690	B
70-79%	537-613	C
60-69%	461-536	D

## Lecture, exam, and homework schedule

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Date	Lecture	Topic	Brady & Weil Chapter
08-Sep	1	Introduction to course and soils	1 The Soils Around Us
13-Sep	2	Soil Formation	2 Formation of Soils From Parent Materials
15-Sep	3	Soil Structure	4 Soil Architecture and Physical Properties
20-Sep	4	Soil Water	5 Soil Water: Characteristics and Behavior
22-Sep	5	Water Relations & Hydrologic Cycle	6 Soil and the Hydrologic Cycle
27-Sep	6	Atmosphere & Temperature	7 Soil Aeration and Temperature
29-Sep	7	Soil Classification	3 Soil Classification
04-Oct		Catch up and review	
06-Oct	EXAM 1	Lectures 1-7, Chapters 1-7	
11-Oct	8	Soil Colloids and Clay Minerals	8 Soil Colloids: Seat of Soil Chemical and Physical Activity
13-Oct	9	Soil Acidity	9 Soil Acidity
18-Oct	9	Soil Acidity	9/10 Soils of Dry Regions: Alkalinity, Salinity, and
20-Oct	10	Soil Biology	10/11 Organisms and Ecology of the Soil
25-Oct	11	Soil Organic Matter	11/12 Soil Organic Matter
27-Oct	11	Soil Organic Matter	
01-Nov		Catch up and review	
03-Nov	EXAM 2	Lectures 7-11, Chapters 8-12	
08-Nov	12	Nutrient Cycling--N & S	12/1 Nitrogen and Sulfur Economy of Soils
10-Nov	13	Nutrient Cycling--P & K	13/1 Soil Phosphorus and Potassium
15-Nov	14	Nutrient Cycling--Micronutrients	13/1 Micronutrients and Other Trace Elements
17-Nov	15	Nutrient management	14/1 Practical Nutrient Management
22-Nov	16	Soil Erosion	15/1 Soil Erosion and Its Control
24-Nov	17	Soils & Pollution	18 Soils and Chemical Pollution
29-Nov	18	Mapping and global food supply	19 Geographic Soils Information

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01-Dec	19	Permafrost	20 Global Soil Quality as Affected by Human Act
06-Dec		Catch up and review	7 Soil Air and Soil Temperature
08-Dec	EXAM	Lectures 12-19, Chapters 13-20	
13-Dec	3	Review Exam, evaluate course	

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