

## Class Syllabus

### Fundamentals of Environmental Sampling Laboratory - NRES 320

Spring, 2012

Instructor

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### Course Goals

1. Provide hands-on experience in environmental sampling of: (i) soil and vadose zones, (ii) ground and surface water, and (iii) air.
2. Demonstrate and engage students in use of common environmental sampling equipment.
3. Explain theory and principles of analytical equipment.
4. Articulate the procedures used by commercial laboratories to analyze environmental contaminants.
5. Critique laboratory results for data assessment.

### Grading

Grades will be based on four laboratory activities and one final exam. The final exam and the each laboratory activity will be worth 20 points for a total of 100 points.

Students will work in teams of 3 to 4 during sampling events. Student teams will have the option of documenting the sampling technique they learned by generating a "YouTube" – type video or alternatively, each team member can write up a laboratory report.

Laboratory reports should be approximately two to three pages in length and follow the following format:

1. Objective - State objective of laboratory exercise.
  - a. Material and Methods
  - b. This section should be written in a manuscript format that is short and succinct but contains enough detail or references to allow an outsider to repeat the sampling procedure.
2. Results and Discussion
  - a. Include digital photos of procedures used during sampling. When data is generated, present appropriate calculations, tables, and figures and include short interpretation of results.
3. References (Not included in 3-page limit)

Attach Standard Operating Procedures (SOP) used for sampling event.

Laboratory Reports are due by 5:00 PM on assigned days. Any laboratory report turned in after due date will be deducted 10 pts. Late problem sets will no longer be accepted once problem sets have been returned to students.

Final grades will be based on the percentage of 100 points with the following as a guideline as to how grades will be assigned: 92%+ A, 87-91% B+, 80-86% B, 70-79% C, 60-69% D, <60% F. The instructor maintains the flexibility to adjust percentages (e.g.,  $\pm 1-2\%$ ) to account for class performance.

## Cheating

The University of Nebraska-Lincoln has a policy about academic dishonesty, as indicated in the Student Code of Conduct (see Undergraduate Bulletin). As a student at UNL, you enjoy rights and protections under the code and are obligated to conduct yourself in compliance with the code. An area where students have some confusion regards plagiarism. The key concept here is misrepresenting the work of another as one's own. Students may, and are encouraged to, work on laboratory reports together but the final exam is obviously to be taken separately. As the Student Code of Conduct indicates, academic sanctions for misconduct subject to appeal are at the discretion of the instructor, and may include giving the student a failing grade for the course. In this course, the least penalty I will impose for misconduct is a one letter grade reduction in the course grade, but in most instances the penalty for cheating will be a failing grade in the course.

[Click here for a link to the "Academic Services Handbook."](#)

## Students with Disabilities

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

## Course Calendar

### Schedule and Exam Dates

The following schedule should be viewed as an approximate format of laboratories exercise to be covered. The schedule is, therefore tentative and provided to assist you in planning and reading. Given that weather is unpredictable, two make up dates are incorporated into the class schedule if a laboratory needs to be postponed due to inclement weather.

<i>Week</i>	<i>Laboratory Topics</i>	<i>Assignments</i>
9-Mar 5	Laboratory 1 Soil Sampling Hand tools, Soil Pit descriptions, Giddings Probe, GeoProbe, Borehole Descriptions	
10-Mar 12	Laboratory 2 Surface Water and Stream Sampling	Laboratory 1 Due March 12, 2012
11-Mar 19	Spring Break	Spring Break
12-Mar 26	Laboratory 3 Groundwater Sampling, Air monitoring for VOCs	Laboratory 2 Due April 2, 2012
13-Apr 2	Inclement weather Backup Date	Laboratory 3 Due April 14, 2012
14-Apr 9	Laboratory 4 Understanding the Analytical Laboratory (UNL Water Science Laboratory) Analytical Techniques and their Application Data Quality Assessment	Laboratory 4 Due April 16, 2012
15-Apr 16	Inclement weather Backup Date	
16-Apr 23	Course Evaluation, view student videos, Final Exam	