

**NREM 301L – Natural Resource Management Laboratory (WI)
Spring 2014 – Course Syllabus
Friday 1:30 – 5:20 p.m., Sherman 111**

INSTRUCTORS

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TEACHING ASSISTANT

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HOURS

| | | | |
|--------------|-----|----------------|------------------------------|
| Lectures: | MWF | 9:30 – 10:20am | *See the 301 course syllabus |
| Lab: | F | 1:30 – 5:20pm | Sherman 111 |
| Office (SC): | W | 3:00 – 4:00pm | Sherman 132 |
| Office (CL): | T | 2:00 – 3:00pm | Sherman 240 |
| Office (MP): | M | 4:30 – 5:30 pm | Sherman 202 |
| | W | 1:00 – 2:00 pm | |

COURSE WEBSITES

- www.ctahr.hawaii.edu/LittonC/teaching.html

CO-REQUISITE

- NREM 301 – Natural Resource Management

COURSE DESCRIPTION & OBJECTIVES

This is the laboratory section of NREM 301, an intermediate-level course on natural resource management. The laboratory focuses on broadening students' understanding of principles and concepts taught in the co-requisite lecture course (NREM 301) through "hands-on" field, laboratory, and computer experiences. In particular, students learn basic field measurement techniques and computer skills that are commonly used in managing natural resources. In addition, students learn to develop and write scientific lab reports. After completing the laboratory section of this course, students will be able to:

- Use spreadsheet software (Excel) for basic data manipulation and graphing
- Record and organize field data
- Measure key physical and chemical soil properties
- Gain familiarity with current trends in wastewater recycling
- Assess stream conditions and stream water quality
- Understand how global positioning system (GPS) devices and Geographical Information System (GIS) software can be used for resource assessment and inventory
- Quantify forest timber resources
- Gain an understanding of current coastal ecology and management issues in Hawaii
- Analyze and understand recent trends in atmospheric CO₂ concentrations

GRADING ASSIGNMENTS

| | |
|---------------|-----|
| Participation | 5% |
| Data sheets | 40% |
| Lab reports | 55% |

GRADING SCALE

| | | | | | | | |
|----|------------------|----|------------------|----|------------------|----|------------------|
| A+ | $x \geq 97$ | B+ | $90 > x \geq 87$ | C+ | $80 > x \geq 77$ | D+ | $70 > x \geq 67$ |
| A | $97 > x \geq 93$ | B | $87 > x \geq 83$ | C | $77 > x \geq 73$ | D | $67 > x \geq 63$ |
| A- | $93 > x \geq 90$ | B- | $83 > x \geq 80$ | C- | $73 > x \geq 70$ | F | $x < 60$ |

Participation (5%)

This part of the final grade is based on a student’s engagement in lab and includes attendance, full participation in lab activities (including proper attire), respect and proper use of laboratory and field equipment/ computers/etc., working in team settings, and a positive attitude.

WRITING INTENSIVE (WI) ASSIGNMENTS

Data Sheets (40%)

Most labs will require students to submit a data sheet, typically at the end of each lab. The purpose of this requirement is for students to learn to effectively and accurately record data while they are being collected. The instructors and TA will provide assistance on how to take notes and record data efficiently during the lab exercises. Some datasheets will require students to answer several short essay questions either during or at the end of exercise. The purpose of these short essay questions is to help students understand key points by having them articulate answers in an intelligent and concise manner.

Lab Reports (55%)

Four lab exercises will require individual student submissions of a lab report which must include an introduction, materials and methods, results, and discussion and conclusions. Figures and/or tables will also be required for effective presentations of data. Specific instructions will be provided for each lab report assignment to assist students in developing an effective report.

The first two reports will be returned to students ungraded after review by the TA and instructors. Students will revise their reports based on these comments, and final grades will be given on the revised reports. **Failure to hand in a rough draft is not an option for these two reports, and will result in a zero for that lab report.**

No reviews or comments will be provided on a rough draft of the last two reports. Students will develop the final reports based on what they have learned through the first two reports.

Program Goals of Writing Intensive Courses

Through multiple WI classes, students will:

- Be able to write effectively
- Develop strategies for effective writing,
- Learn to use and value writing as a tool for learning,
- **Learn to write in the primary genres of their chosen fields, following appropriate conventions.**

POLICIES

- **Attendance is mandatory! You will receive no credit for any missed lab exercise and there will be no make-up opportunities.**
- Late submissions of lab reports will only be accepted in the case of an emergency (e.g., illness, family emergencies) and will require prior approval of the instructor(s), where possible, with a doctor's note, a copy of student's itinerary, etc.
- Students are fully responsible for obtaining handouts and for keeping track of assignments, due dates, and grades.

ACADEMIC INTEGRITY

Students are expected to act with the utmost integrity. The *University of Hawai'i at Mānoa Student Conduct Code* (<http://www.manoa.hawaii.edu/students/conduct/>) defines cheating and plagiarism as follows:

Cheating includes but is not limited to giving or receiving unauthorized assistance during an examination; obtaining unauthorized information about an examination before it is given; submitting another's work as one's own; using prohibited sources of information during an examination; fabricating or falsifying data in experiments and other research; altering the record of any grade; altering answers after an examination has been submitted; falsifying any official University record; or misrepresenting of facts in order to obtain exemptions from course requirements.

Plagiarism includes but is not limited to submitting, in fulfillment of an academic requirement, any work that has been copied in whole or in part from another individual's work without attributing that borrowed portion to the individual; neglecting to identify as a quotation another's idea and particular phrasing that was not assimilated into the student's language and style or paraphrasing a passage so that the reader is misled as to the source; submitting the same written or oral or artistic material in more than one course without obtaining authorization from the instructors involved; or "drylabbing," which includes obtaining and using experimental data and laboratory write-ups from other sections of a course or from previous terms."

If you ever have any questions about what constitutes fair academic play, please come and talk to the instructors or the TA! Cheating or plagiarism will result in an F for your final grade in the course. It may also lead to other serious academic repercussions beyond this course.

ACCOMMODATIONS FOR DISABILITIES:

If you feel you need reasonable accommodations because of the impact of a disability, please 1) contact the KOKUA Program (V/T) at 956-7511 or 956-7612 in room 013 of the QLCSS; 2) speak with me privately to discuss your specific needs. We will be happy to work with you and the KOKUA Program to meet your access needs related to your documented disability.

FINAL CAVEAT

All material on this syllabus is subject to change at the discretion of the instructors to suit the needs of the course.

Course Schedule

| Week No. | Date | Lab Exercise (F 1:30pm – 5:20pm) | Assignments Due |
|-----------------|--|---|---|
| 1 | 1/17 | Introduction – Lab Overview / Grouping [Sher 111] | Attendance |
| 2 | 1/24 | Basic Properties of Hawaiian Soils [Sher 207] • Measure and compare several “key” physical and chemical properties of typical Hawaiian soils | Data Sheet DUE 1/24 |
| 3 | 1/31 | Measuring Soil Erosion Parameters [Sher 111] • Learn to measure soil erosion parameters in field | Data Sheet DUE 1/31 |
| 4 | 2/7 | Predicting Soil Erosion by Water [AgSci 215] • Estimate soil loss by water erosion using the USLE equation | Data Sheet DUE 2/7 |
| 5 | 2/14 | <u>Field Trip</u> : Honouliuli Wastewater Recycling Plant [Sher 111] • Learn about water issues, including shortages and technologies for recycling wastewater | Data Sheet DUE 2/14 Lab Report 1 Draft DUE 2/14 |
| 6 | 2/21 | Global Positioning System (GPS) and Geographical Information System (GIS) [AgSci 215] • Learn to use GPS and GIS | Data Sheet DUE 2/21 |
| 7 | 2/28 | <u>Field Trip</u> : Manoa Stream Quality Assessment [Sher 111] • Learn to assess stream water quality | Data Sheet DUE 2/28 Lab Report 1 Final DUE 2/28 |
| 8 | 3/7 | <u>Field Trip</u> : Forest Measurements [Sher 111] Learn to obtain forest inventory data in the field | Data Sheet DUE 3/7 Lab Report 2 Draft DUE 3/7 |
| 9 | 3/14 | Forest Inventory and Analysis [AgSci 215] • Process and interpret forest inventory data | Data Sheet DUE 3/14 |
| 10 | 3/21 | No lab | Lab Report 2 Final DUE 3/21 |
| 11 | No lab: Spring Recess (3/24 – 3/28) | | |
| 12 | 4/4 | <u>Field Trip</u> : Coastal Ecology & Management [Sher 111] • Tour Hawaii Institute of Marine Biology <i>or</i> Freeman Seabird Preserve, Black Point | Data Sheet DUE 4/4 Lab Report 3 Final DUE 4/4 |
| 13 | 4/11 | CTAHR Student Research Symposium | Data Sheet DUE 4/11 |
| 14 | 4/18 | No Lab: Good Friday | |
| 15 | 4/25 | Global Change Biology [AgSci 215] • Become familiar with long-term trends in atmospheric CO ₂ concentrations | Data Sheet DUE 4/25 |
| 16 | 5/2 | No lab | Lab Report 4 Final Due 5/2 |