

ENSC 1102.02 – LAB FOR ENVIRONMENTAL SCIENCE II (CRN 23892)
UNIVERSITY OF HOUSTON–CLEAR LAKE
SPRING 2016

Instructor: Dr. Gerald D. Pollack pollack@uhcl.edu
Instructor's Office: Bayou 3321-8 281-283-3742
Natural Science Division Office: Bayou 3525 281-283-3770
Advisement and Tutoring Hours: MWF: 10:00-11:00; 12:00-1:00 TR: 11:45-12:45
Teaching Assistant: Korry Huddleston
TA Office Hours: Mondays 3:00-5:00pm
TA Meeting Place: Bayou 3215
TA email: HuddlestonK7025@UHCL.edu

Class Meeting: Thursdays from 1:00 to 3:50pm in Room B-3215.

Course Textbook – REQUIRED:

Shanholtzer and Hall. 2014. Exploring the Environment. ISBN 978-073806988-3. This lab manual is to be brought to every class meeting.

Additional Required Materials:

- Safety glasses (available in the university bookstore)
- Lab coat (available in the university bookstore)

Co-requisites: ENSC 1302

Catalog Description: Laboratory exercises in environmental quality assessment techniques, field sampling techniques, and related studies of local environments. Optional and required field trips.

Learning Outcomes:

Upon successful completion of this course, students will:

- Delineate relationships between living and non-living components of biogeochemical systems that comprise the biosphere
- Understand natural resources and relate environmental problems to man's use of these resources
- Communicate a practical understanding of the biology, chemistry and physics that relate to environmental quality and the scientific methods used to measure the pertinent parameters
- Communicate ways of living that minimize environmental problems
- Collect and analyze field data and write reports
- Work with peers to apply content knowledge in problem solving
- Effectively communicate solutions and reasoning to classmates and course instructor

Course Format and Requirements:

This course will consist of face-to-face laboratory activities. Review questions and module assignments will summarize laboratory exercises and be submitted either in hard copy (paper) or electronic format, as designated by the instructor.

Attendance: Students who miss lab exercises perform very poorly in this course. The primary objective of any lab course is to provide the student with a “hands-on” experience that will support and illustrate the concepts covered in the lecture portion of the course. Lab is about seeing and doing. Therefore, consistent and timely attendance to lab is a must for success in this course!

There will be no make-up lab exercises. Due to logistical and safety concerns, “wet labs” (labs requiring the use of equipment, chemicals, solutions, etc.) cannot be made up. Any grades collected during the missed class, such as quizzes, cannot be made up and will be recorded as a zero. If a student misses a laboratory exercise, the exercise cannot be turned in for grading. Students are responsible for any information covered in their absence.

Lab will start promptly at the scheduled time. Important introductory and safety information will be given at the beginning of each lab. Late arrival to lab will affect your understanding of the entire lab exercise and may pose a safety hazard to you and other students. If a quiz is given at the beginning of the lab, a student arriving late will not be allowed to take the quiz.

The only tests that may be made up are Tests 1, 2, or 3. One of these may be made up during the last period following completion of Test 4. If you miss an additional test or if you miss Test 4, these will be recorded as a zero (0). Test 4 can only be made up if there is a successful petition for an incomplete grade. Students must be on time for their scheduled exams. Students entering after the exam has begun may not be allowed to finish.

Assessment: Assessment will consist of four in-class tests (non-cumulative), four module assignments, and twelve sets of review questions. Review questions should be completed and submitted using Blackboard. Test questions will be mostly short answer, with some calculations and graphing exercises as well.

This course will also have an optional civic engagement opportunity. This course will be partnering with Artist Boat Inc., a 501(c)(3) non-profit organization headquartered in Galveston. Artist Boat's mission is to promote awareness and preservation of coastal margins and the marine environment through the disciplines of the sciences and the arts. Students will volunteer four hours of time (10:00am - 2:00pm) for habitat restoration on one of two dates (April 3 or April 9). The location of the project is Artist Boat's Coastal Heritage Preserve, 13117 Settegast Road, Galveston, TX 77554. Participation in this activity will substitute for submission of assignments associated with Modules G and H.

Communication:

Class communication will be through Blackboard or your UHCL student email account (@uhcl.edu). The class schedule including a list of topics are located on the class calendar in Blackboard (<http://blackboard.uhcl.edu>).

Grade Determination:

Grading Criteria	Percentage
Tests (4)	60%
Module Assignments (4)	28%
Review Questions (12)	12%
TOTAL	100%

Grading Scale:

Final Grades will be given on the university scale:

Letter Grade	Percent Range						
A	100-93%	B	87-83%	C	77-73%	D	67-63%
A-	93-90%	B-	83-80%	C-	73-70%	D-	63-60%
B+	90-87%	C+	80-77%	D+	70-67%	F	60-0%

Laboratory safety policies and procedures*General Lab Safety*

1. Only students enrolled in the laboratory course are allowed in the laboratory.
2. No one is allowed to eat, drink, smoke, or apply cosmetics while in the lab.
3. Shoes that completely cover the feet are required for lab. Bare feet, sandals, and open-toed shoes are not allowed.
4. Long hair, dangling jewelry, or loose clothing should be tied back or otherwise confined during lab.
5. Desk areas should be kept uncluttered. The tabletop area is not to be used for materials that are not essential to the experiment (e.g., pocketbooks, lecture text books, etc.).
6. Desktops must be cleaned after each laboratory meeting.
7. Gloves and goggles must be worn while working with preserved specimens, hazardous chemicals, or as indicated by your instructor. The labs that require gloves and goggles are indicated on the course schedule.
8. In the event of any accident, notify the instructor immediately. Do not attempt to clean up broken glass or spilled chemicals yourself.
9. Bandage all cuts on hands before dissecting or using chemical reagents.
10. Small sharp objects such as used slides or small pieces of broken glass should be placed in a Sharps container or other container as indicated by your instructor.
11. No lab material of any kind may leave the laboratory.
12. No students are allowed in the laboratory outside regular laboratory class time unless Science Dept. Supervisory Personnel or a faculty member is present.
13. Know the location of emergency equipment, emergency exit locations, and telephone. Report any condition that appears unsafe or hazardous to your instructor.
14. Wash hands before leaving the laboratory.
15. Microscopes are to be put away properly with scanning objective in place, cord wrapped with Velcro, and mechanical stage is centered so that extended arms DO NOT hit into other scopes or walls of the cabinet.

Chemical safety

1. Some chemicals used in this laboratory may be absorbed by contact lenses. It is advisable to remove contacts before lab or wear tight fitting goggles during lab exercises that will involve these chemicals.
2. Dispose of all chemical waste in the proper waste container as indicated by your instructor. NEVER pour any chemical down the sink without permission from your instructor.
3. Do not taste chemicals or pipette solutions by mouth.
4. Wash your hands if you contact any chemical solution. Assume that all reagents are poisonous and act accordingly. Read labels on chemicals for any safety precautions and know the nature of the chemicals you are using.
5. Students with special conditions (pregnancy, nursing mothers, allergies, depression of immune system through such things as disease, chemotherapy, transplants, etc.) should be aware that science laboratories contain materials which, if handled improperly, may have a hazardous effect on them. These students should contact their doctor for advice about continuing in the laboratory. Students who wish to withdraw from a laboratory after consultation with their doctor should submit a letter from the physician within the first two weeks of class indicating that the student should not continue in the laboratory due to a health risk. Information about the chemical compounds used in science laboratories is available from the lab coordinator.

Biohazard safety

1. Any biologically contaminated items (toothpicks, sheep blood, swabs, and slides) must be placed into the appropriate disposal container as indicated by your instructor.
2. Students must only handle their own cheek cells and bodily fluids.
3. Do not use the microscope if you have an eye infection.
4. Preserved animals that are used over multiple lab periods must be sprayed with preservative, placed in an appropriate storage bag, sealed, and placed in your group's bin or can at the end of each lab period. Any parts from the animals must be discarded into the biohazard container as indicated by your instructor. Organisms that are used for only one class period must be discarded into the biohazard container as well.

Last Day to Drop/Withdraw: It is your responsibility to withdraw from this course if you no longer want to remain in the course. I will not withdraw you for lack of attendance. You will be assigned the grade you have earned if you stop attending class with zeroes for all missed exams and missed quiz scores. In other words, you will fail the course if you stop attending class and you don't withdraw yourself. The deadline to withdraw from 15-week session courses without evaluation (receive "WQ" on your transcript) is **Tuesday, April 12.**

Return of graded materials:

All graded materials will be returned within one week of submission. After returning materials, there will be a one-week window of opportunity for students to have corrections made to scores on these materials. Exam grading keys will be available for review by any student on the date that the exam is returned. After this date, grading keys only will be available during office hours or a scheduled

appointment. After the one-week window, the electronically recorded score will become the permanent score in a spreadsheet.

Academic Honesty:

Each student is charged with the responsibility of maintaining all requirements as outlined in the undergraduate catalog in the section entitled "Academic Honesty Policy." Intentional cheating can result in loss of assignment credit, course credit, and/or failure in the course. Intentional acts of cheating can also result in dismissal from UHCL.

Violation of the Academic Honesty Policy will result in a grade of "0" (zero) for that graded assignment and the associated university paperwork may be submitted. The second offense will result in assignment of a grade of "F" for the course and the associated university paperwork will be submitted. If you are caught cheating on the final exam, you will fail the course (the grade of "F" will be assigned) and the associated university paperwork will be submitted.

Extra Credit: You are expected to attend and to master the material presented during the lectures and from your reading of the textbook (and any supplemental handouts), and your grade will be determined solely on the basis of your performance on the criteria listed under the heading of "Grading". Therefore, there will be **NO opportunity for you to earn extra credit by individual efforts** such as out-of-class papers, book reports/reviews or any other type of project that might be submitted for this purpose.

Electronic Devices: Electronic devices (e.g. cell phones, computers, etc.) are very distracting and may be damaged by chemicals used in the lab. In order to avoid damage to electronics associated with lab supplies, please put them away during the lab.

Classroom Conduct: Disruptive student behavior in an academic setting is defined as any behavior that interferes with teaching, administration, college activities, and the collegiate learning process. Determination of a behavior as disruptive is at the discretion of faculty or staff and can be dependent upon many factors. In the case where a student behavior is determined to be a disruption, you will be subject to the university Code of Conduct.

Students with Disabilities:

It is university policy, in accordance with 504/ADA guidelines, that no otherwise qualified disabled individual shall, solely by reason of disability, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any academic activity. Disabled students may request academic adjustments and auxiliary aids through the Office of Disability Services (SSCB 1302, Tel. 281-283-2648). Students who are registered with the office should bring the instructor documentation on the first day of class or within the first week of the semester.

6 Drop Rule Limitation:

SB 1231 prohibits students from enrolling for the first time as a freshman during the fall 2007 academic term or any term thereafter from dropping more than a total of six courses in their entire undergraduate career. This total includes any course a transfer student has dropped at another 2-year or 4-year Texas public college or university. This does not apply to courses dropped prior to the census date (See Academic Calendar at www.uhcl.edu/records) or to courses for which the students receive an administrative withdrawal noted with a grade of "WX" and does not apply if the student withdraws from the term or session. More information can be found in the Student Handbook.

Policy on receiving an Incomplete:

The university policy (see Undergraduate Catalog) regarding the grade of “I” will be followed strictly. This grade is available only to students who, because of circumstances beyond their control, are unable to complete a relatively small part of the course, and who are passing the course at that time. If an Incomplete is granted, the missing work must be made up within the guidelines of the Undergraduate Catalog and the time limit set by the instructor.

Grades at the end of the Semester: Reports of student final grades will available via the Internet (<http://prtl.uhcl.edu/portal/page/portal/AR/EASE/Main>). Due to privacy concerns, early release of final grades will only be done in person.

Course Schedule:**Tentative Schedule of Laboratory Exercises**

Week	Date	Lab Exercises (included activities)
1	January 21	Paperwork Module C: Energy – Ex. 1: Energy Basics (1-3)
2	January 28	Module C: Energy – Ex. 2: Energy Audit of a Building (1-3)
3	February 4	Module C: Energy – Ex. 2: Energy Audit of a Building (1-3) Module C: Energy – Ex. 3: Solar Energy (1-2)
4	February 11	Test 1 (Module C) Module E: Water – Ex. 1: Water, Where Does It Come From? (1-2)
5	February 18	Module E: Water – Ex. 1: Water, Where Does It Come From? (2[field work], 3) Module E: Water – Ex. 2: How We Use Water/How Good Is It? (1,2 homework)
6	February 25	Module E: Water – Ex. 2: How We Use Water/How Good Is It? (3)
7	March 3	Module E: Water – Ex. 3: Where Does It Go (1 - field trip)
8	March 10	Test 2 (Module E) Module G: Soil – Ex. 1: Feeding a Hungry World (1-2A)
9	March 17	No Lab – Spring Break
10	March 24	Module G: Soil – Ex. 1: Feeding a Hungry World (2B-4) Module G: Soils – Ex. 2: Soil Development (1-2E)
11	March 31	Module G: Soils – Ex. 3: Plant Nutrition, Erosion, and Agriculture (1-5)
12	April 7	Test 3 (Module G) Module H: Atmosphere – Ex. 1: Ozone, A Special Problem
13	April 14	Module H: Atmosphere – Ex. 2: Outdoor Air Quality
14	April 21	Module H: Atmosphere – Ex. 3: Indoor Air Quality
15	April 28	Test 4 (Module H)