Syllabus for
EVR 250-Environmental Science Laboratory
1 Credit Hour
Spring 2009

I. COURSE DESCRIPTION

Demonstrates the practical and technical aspects of data acquisition for environmental analysis.
Corequisite: EVR 250 Lecture.
Lab fee: $30.

II. COURSE GOALS

The major goals of this course are to involve the student in problem solving, analysis, and social interaction. As a result of taking this course, the student will have the means of understanding the physical, chemical and social factors which control the dynamic cycles in the atmosphere, hydrosphere, lithosphere, and biosphere. By learning proper laboratory techniques, the student will be introduced to scientific principles that are used to objectively obtain and analyze data for investigating natural phenomena. The student will also experience working together in a team situation, learning collaboratively with lab partners.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

As a result of successfully completing this course, the student will be able to do the following:

A. Examine the physical and chemical relationships that govern the movement, concentration, and location of toxic substances in the environment.

B. Measure and calculate the conversion of energy from one form to another and conclude whether stresses are placed on the environment as a result of exploiting energy resources.

C. Monitor environmental parameters and take census of species abundance in the field to assess the level of health or stress in local ecosystems

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

Required Materials
Textbook
Herr, Stephen. Laboratory Manual for Environmental Science, ORU 2003

V. POLICIES AND PROCEDURES

A. University Policies and Procedures
   1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
   2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.

3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' electronic verification or by other means.
4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding ePortfolio requirements. Students should consult the ePortfolio handbooks for requirements regarding general education and the students' majors.
   a. The penalty for not submitting electronically or for incorrectly submitting an ePortfolio artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Policies and Procedures

1. Evaluation Procedures

   a. Testing and Grading

		Points
1)	Weekly labs (12 labs + quizzes x 10 points each)	120
2)	Outside service project	40
3)	ePortfolio assignemt	20
4)	First Half Exam (first 6 laboratories)	100
5)	Second Half Exam (last 6 laboratories)	100
	TOTAL	380

   5) Course Grade
      a) Divide total points earned by 380 and convert to percentage.
      b.) Letter grades shall be assigned according to the following ranges

A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	Less than 60

2. Laboratory Design
   a. There are 12 laboratory sessions lasting 2 hours 40 minutes plus two weeks when examinations will be given. Assignments will include in-class experiments, outdoor field measurements, and map exercises.
   b. Each experiment will be conducted in small groups, each working with its own set of materials. Although cooperation is essential in performing an experiment each student will be required to work alone for exams.
   c. Loss, damage, and breakage fees: Each student is responsible for the university materials that are used during the laboratory period and will be assessed an appropriate fee for any items that are lost, damaged, or broker.

3. Makeup
   a. No makeup labs will be offered. If a student has an excused absence, the lab total will be divided by a lower number to reflect the excused lab.
   b. Whether a student is present or absent, the student is responsible for all material for all exams announced by this syllabus.
4. ePortfolio Requirements
   A response to the laboratory covering flood prediction will be submitted through the Chalk & Wire system to serve as the ePortfolio assignment

VI. COURSE CALENDAR

SESSION	TOPIC	POINTS
1.	Environmental calculations & location	_____
2.	Map Interpretation	_____
3.	Principles of Analysis	_____
4.	Renewable Energy	_____
5.	Sieve and Grain-size Analysis	_____
6.	Soil Classification and Analysis	_____
7.	Exam I	_____
8.	Bird Census – Campus Monitoring	_____
9.	Flood Frequency Calculation	_____
10.	Water Sampling Techniques	_____
11.	Permeability & Porosity	_____
12.	Weather Factors	_____
13.	Appropriate Technology	_____
14.	Exam II	_____

FOR OUTSIDE PROJECT, 2 ACTIVITIES MUST BE UNDERTAKEN FOR 20 Pts. Each

1. Involvement in a community volunteer program can also satisfy part or all of the requirement:
   - Household Collection of Hazardous Waste Events (in 4 hour increments)
   - Blue Thumb Program (training course or educational events)
   - Participation in the ORU recycling program
   - Oklahoma Academy of Science Meetings
2. Student initiated projects will also be considered.
   Examples of projects could be:
   - Trash pickup in a park or on church grounds
   - Initiation of recycling program at a church
   - Planning of an educational project to teach environmental stewardship to non-ORU students.

Course Inventory for ORU's Student Learning Outcomes

EVR 250 - Environmental Science Laboratory
Spring 2009

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities	Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge				√
1B	Sensitivity to the Holy Spirit				√
1C	Evangelistic capability				√
1D	Ethical behavior			√	
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking	√			
2B	Information literacy		√		
2C	Global & historical perspectives	√			
2D	Aesthetic appreciation				√
2E	Intellectual creativity		√		
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle			√	
3B	Physically disciplined lifestyle			√	
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills		√		
4B	Interpersonal skills		√		
4C	Appreciation of cultural & linguistic differences				√
4D	Responsible citizenship		√		
4E	Leadership capacity			√	

(Revised 1/15/04)