CASPER COLLEGE COURSE SYLLABUS

ENR 1200: Environmental Science

Fall 2015

Lecture Hours: 3	**Lab Hours**: 3	**Credit Hours**: 4
Class Time: 10-11:40	**Days: MWF**	**Room: EI 116**

Instructor's Name: Kelsey M. Phillips, Ph.D.

Instructor's Contact Information:	**Office Phone:** 307-268-2873	**Email:** kelseyphillips@caspercollege.edu

Office Hours:

Course Description: This course fulfills a lab science requirement for both science and non-science majors by introducing key concepts in the life sciences through analysis of environmental and natural resource issues. It is appropriate for all students seeking a deeper understanding of environmental challenges. This course is intended to cultivate informed citizens capable of understanding both the scientific basis of environmental challenges as well as an appreciation for the importance of the non-scientific dimensions of those challenges. This course uses complex, real-world environmental challenges to explore fundamental scientific principles such as hypothesis testing, energy flow, nutrient cycling, ecosystem structure and function, population ecology, community ecology, and the role of humans in systems.

Statement of Prerequisites: none

Goal: Students will gain an understanding of contemporary environmental issues through the use of the scientific method and will explore the ethical, cultural and economic dimensions of those issues as well.

Outcomes:

1. Demonstrate effective oral and written communication
2. Use the scientific method
3. Solve problems using critical thinking and creativity
5. Use appropriate technology and information to conduct research
6. Describe the value of personal, civic, and social responsibilities
7. Use quantitative analytical skills to evaluate and process numerical data

Course Objectives:

- Students will develop core scientific skills including the ability to use the scientific method, perform basic data analysis, evaluate a range of information sources and present study results
- Students will demonstrate knowledge of foundational principles critical to understanding environmental issues including: energy transfer and nutrient cycling, population growth and control, community organization and biodiversity, the relationship of atmospheric and climactic structure and its relationship to biotic systems
- Students will explore the limits of science to complex environmental challenges through examination of legal, political, cultural, ethical and economic dimensions

- Students will examine contemporary environmental issues such as land use, air and water quality and sustainability

Methodology: This course utilizes a variety of teaching methodologies including but not limited to: lecture, lab, class discussion, computer simulations, laboratory exercises and field work. Assignments and class activities will provide students with hands-on learning opportunities. This class requires a service-learning component.

Evaluation Criteria:

Laboratory Write Ups	200 points (5 reports, 50 points each, drop lowest)
Mini Presentations	150 points (3 total, 50 points each)
Nitrogen footprint diary	50 points
Midterm examination	150 points
Classroom attendance & participation	100 points
Individual research project	200 points
Community Presentation	150 points

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Required Text, Readings, and Materials:
Readings will be provided in class. It is your responsibility to read these prior to in class discussion. This is a laboratory course which involves field work. Be prepared to go outside every day! Closed-toe shoes, long pants or a long skirt are required at all times when working in the laboratory. Eye protection and lab aprons will be made available to you if they are necessary.

Class Policies:
Cellular phones and other mobile devices: Mobile devices have changed the way we communicate, socialize, look up information and learn. They can be a powerful tool in the classroom, but they can also be a terrible distraction. At times, I may request that you use your mobile device for a class project, however they are to be tucked away and silenced at all other times. If I notice that a mobile device is being used for non-class purposes, it alarms in any way that disturbs the class, or is becoming a distraction to you or others, I will stop class and we will immediately have a pop quiz.

Classroom courtesy: We are a team. We will work together on assignments, class projects and exams. You are expected to treat others courteously and professionally at all times. Arrive on time, avoid distracting others during class.

Food and drink: We will be meeting in a laboratory. We routinely clean the tables and counters, but we can't make any guarantee that they are safe to eat and drink on. Food and drinks are to be left outside of the classroom at all times. If you need a drink, there is a shelf outside of the classroom that you can place a water bottle on. You may exit the classroom at any time to get a drink of water.

Laboratory attire: This is a laboratory class, and we meet in a laboratory classroom. You should arrive to class each day prepared to work in the laboratory. Closed-toe shoes, long pants or a long skirt are required at all times. Eye protection and lab aprons will be made available to you when necessary.

Mini presentations: We will prepare and present three mini presentations during the course of the semester. A grading rubric will be provided. Make sure you are in class on the day of the mini-presentation, as no make-ups will be allowed. There are several reasons we do these mini presentations, and they are outlined below:

- The thought of public speaking is enough to generate nightmares for some of us. Through our mini-presentations, we'll work together to gain confidence in presenting scientific information. We will be supportive to each other!
- Researching scientific information can be a daunting task. This will give you practice in finding credible information.
- It gets REALLY boring listening to your instructor all the time. This will help break up some of the monotony

Field trips: We have several field trips scheduled throughout the semester. Attendance is mandatory! Transportation will be provided for you. We will depart from the EI parking lot at exactly 10:05 am. We will return by 11:40. Please do not be late to class on these days, we'll need all of our class time in the field.

Attendance: Regular and consistent attendance is critical for your completion of the course. Make every effort to be in class every day. Participation in class activities will be recorded as part of your grade in the course.

Service Learning: Service learning is a powerful tool that allows students to apply what they are learning in the classroom to real world problems. You will receive a handout that describes the service learning activity that we will conduct as part of our study this semester. Please mark your calendar for Monday, December 7 from 6-8 pm. This will be our service activity date, and more details will follow. Attendance at this event is mandatory.

Last Date to Change to Audit Status or to Withdraw with a W Grade:

November 12, 2015

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu . The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Tentative Class Schedule

I will make every effort to keep us on schedule. If a modification to the schedule is required, it will be announced in class.

Week	Topics	Important Dates & Deadlines
1 Aug 24	**Monday:** Welcome, Team-building Choose your mini-presentation: biome **Wednesday:** Science and pseudoscience **Laboratory 1: The Scientific Method** **Friday:** Matter, molecules and energy **Introduction of Problem Based-Learning, Individual Inquiry Investigation**	
2 Aug 31	**Monday:** Energy flow in ecosystems. The water cycle. **Wednesday:** The carbon cycle **Laboratory 2: Ecosystem in a bottle** **Friday:** The nitrogen cycle **My nitrogen footprint and food!**	Lab Write Up #1 Due September 4
3 Sept 7	**Monday**: **Labor Day Holiday, campuses closed** **Wednesday:** Climate, weather and biomes (Mini presentation #1: Biomes) **Friday:** Natural selection, co-evolution and interrelationships **Service learning check in**	
4 Sept 14	**Monday: Field Trip #1: Invasive Weeds of Natrona County** ***Guest Speaker: Bob Shellard*** **Wednesday:** Populations and population growth	Nitrogen footprint diary due September 18

	Friday: Food security and global issues **Problem-Based Learning Work Session, Individual Inquiry Investigation**	
5 Sept 21	**Monday:** Food security and global issues **Wednesday:** The water cycle in a bottle Choose your mini-presentation water issue **Friday: Wyoming Food For Thought- visit from agency.** **Bring your questions, draft proposals, roadblocks you have encountered and other data**	Lab Write-Up #2 Due September 25
6 Sept 28	**Monday: Mini-field trip: Casper College Library (Meet in room 215A)** *Researching water issues using more reputable sources than Google* **Wednesday:** Water and water issues **Friday:** Water and water issues (Mini-presentation #2: Water Issues) **Problem-Based Learning Work Session, Individual Inquiry Investigation**	How is that team project coming along? Are your class notes organized?
7 Oct 5	**Monday:** Tap and toilet! Municipal water systems. **Wednesday: Field Trip #2: Waste Water Treatment Plant** **Friday:** Water and water quality **Design Laboratory #3: Water Quality Investigation**	How are you doing on your individual inquiry project? Are your class notes organized?
8 Oct 12	**Monday: Field Trip #3: Water Quality- Part I (This is a laboratory)**	Take home midterm is assigned this week! Work

	Wednesday: Field Trip #3: Water Quality- Part I (This is a laboratory) **Friday:** Complete water quality lab	on it as homework so you can use fall break as a break!
9 Oct 19	**Monday**: **Fall Break, no class** **Wednesday: Individual Inquiry Investigations in class work day** **Friday:** Review and discuss midterm	Take home midterm due October 23
10 Oct 26	**Monday:** Soils **Wednesday:** Soils **Laboratory 4: Soil quality** **Friday: Complete Laboratory 4**	Lab-write up #3 due October 30
11 Nov 2	**Monday:** Air quality & global warming **Wednesday:** Air quality & global warming **Laboratory 5: Global warming and Sunscreen investigation** **Friday: Advising Day, no class! Make sure you meet with your advisor.**	Lab-write up #4 due November 6
12 Nov 9	**Monday:** Non-renewable energy Choose renewable energy mini-presentation topic **Wednesday:** Non-renewable energy **Friday: Problem-Based Learning Work Session, Individual Inquiry Investigation**	Lab-write up #5 due November 13
13	**Monday:** Renewable energy mini-presentations	

Nov 16	**Wednesday: TBA** **Friday: TBA**	
14 Nov 23	**Monday:** First draft of posters due, group critique and peer-review **Wednesday: Thanksgiving Break** **Friday: Thanksgiving Break**	
15 Nov 30	**Monday: TBA** **Wednesday: Posters due in electronic format, printing day!** **Friday:** Group reherasal	Posters due in electronic format at the beginning of class on December 2
16 Dec 7	**Monday: Preparation and final touches for Dec. 7 Open House** **6-8 pm, open house and presentations** **Wednesday:** In-class service learning reflection **Friday: TBA**	
17 Dec 14	Finals Week- Optional Final Examination	