ENVST 2050-090: Introduction to Environmental & Sustainability Science – Fall 2017

4 credits (SF)

Section 001 meets Mondays 9:40-12:40, Building 73, room 107

Section 002 meets Wednesdays 9:40-12:40, Building 73, room 107

***Students should only attend the section in which they are enrolled***

Instructor

Dr. Jennifer Shah, jennifer.shah@envst.utah.edu, 585-5730

Preferred pronouns (she, her)

Teaching Assistant (TA)

Yusef Jameel, yusuf.jameel@utah.edu

Preferred pronouns (he, him)

Instructor Office Hours

After class or by appointment (please email)

Instructor Office

Building 73 (Old Law School), room 235

TA Office Hours

By appointment (please email)

TA Office

FASB, room 499

Required Text

A Changing Planet, 1st Edition

This is an interactive e-textbook that can be purchased through the bookstore or directly through Pearson. It is required. For more information, see the Introduction module in Canvas.

Course Web Pages

Canvas: https://utah.instructure.com/courses/450335

REVEL (Pearson Publishing): this page is linked through Canvas. Use the ‘Pearson Revel’ tab in the navigation bar to access the e-textbook. You may also use the REVEL by Pearson mobile app for both Android and Apple products.

Course Description

This course will provide a scientific foundation in Environmental Science. Although there are many social and political concepts critical to Environmental and Sustainability Studies, it is important to have literacy in some basic scientific principles and how they both inform our understanding of critical environmental challenges and help us to devise solutions to those challenges.
Course Objectives

1. Understand the concept of sustainability and its three main scientific pillars: reliance on solar energy, cycling of materials and nutrients, and biodiversity.
2. Understand basic laws of physics and chemistry.
3. Explore how science is conducted and the importance of recognizing bias.
4. Understand the concepts of biodiversity, evolution, species interactions, ecosystems, and ecosystem services. Explore how these concepts are related to foundations of sustainability.
5. Evaluate how various actions have contributed to regional and global environmental challenges and recognize interconnections amongst life-supporting systems (both environmental and societal).
6. Explore different approaches for sustaining biodiversity, resource availability and environmental quality and assess the trade-offs amongst these approaches.

Teaching Methods: The course uses readings, video/animations, quizzes, ‘guided data explorations’, and online ‘laboratory’ exercises to help students master the material presented.

Learning Outcomes

1. Recall basic concepts of sustainability and environmental science (i.e., thermodynamics, energy flow, biodiversity, material and nutrient cycling, and biological organization).
   • Achieved through a survey of topics using an electronic textbook and case studies
   • Measured through quizzes & exams

2. Develop intellectual and practical skills including: inquiry and analysis, critical thinking and recognition of bias, written and oral communication, and quantitative literacy
   • Achieved through guided data exploration activities and laboratory exercises
   • Measured through responses to data exploration activities and laboratory exercises

3. Demonstrate application of knowledge to complex, real-world problem solving within a global systems framework.
   • Measured through answers to synthetic questions posed as part of exams and laboratory exercises
Grading

Participation (chapter quizzes in REVEL, other quizzes in Canvas, guided data explorations IN CLASS): 40%

Lab reports (3): 30%

Exams (3): 30%

Grading Scale

A: 94%-100%  B: 84%-86%  C: 74%-76%  D: 64%-66%
A-: 90%-93%  B -: 80%-83%  C-: 70%-73%  D -: 61%-63%
B+: 87%-89%  C+: 77%-79%  D+: 67%-69%  F: ≤ 60%

Notes on Grading – PLEASE READ CAREFULLY

• Participation points for quizzes completed through the REVEL website can be tracked via the REVEL website. These grades will be integrated into Canvas at the end of the semester before calculating your final grade if they are not automatically integrated into Canvas. Other participation points (for engaging in class discussion) will be entered into Canvas manually.

• The instructor rounds overall scores (i.e., percentages) to the nearest whole number before assigning letter grades. Please calculate what your letter grade would be when rounded BEFORE emailing the instructor about your final grade.

• Incompletes will only be given at the discretion of the professor and only if the student is passing at the time.

Choices for Academic Success – PLEASE READ CAREFULLY

PARTICIPATION

You are expected read the assigned text and do other assignments (all available on our CANVAS website directly or via links to the REVEL website) each week. Class participation is expected and will be reflected in your grade. YOU ARE RESPONSIBLE FOR KEEPING TRACK OF WHETHER OR NOT YOU HAVE COMPLETED THE CHAPTER QUIZ IN THE REVEL PLATFORM. THESE QUIZZES WILL NOT BE IN YOUR LIST OF PENDING TASKS IN CANVAS. There are NO MAKE-UPS for missed quizzes and data exploration exercises. Technical difficulties do occur. Hence, it is wise to take chapter quizzes a day or two before the due date.

Class participation is based on three things: completion of quizzes, completion of guided data exploration exercises, and attendance in class. Quizzes should be done prior to coming to class each week. You must complete the chapter quizzes by the end of each week. However, IT IS IN YOUR BEST INTEREST TO READ THE CHAPTER AND COMPLETE THE CHAPTER QUIZ PRIOR TO COMING TO CLASS. In class, we will be reviewing the contents of the chapter, but mainly focusing on concepts students have trouble understanding. You will not be able to identify concepts in need of clarification if you have not done the reading and completed the quiz.
In class, we will often be working on guided data exploration exercises in groups. These exercises are available through REVEL and students are welcome to go through them independently to help reinforce class concepts. However, PARTICIPATION POINTS WILL NOT BE GIVEN FOR MISSING CLASS BUT COMPLETING A GUIDED DATA EXPLORATION ONLINE.

We often will be watching videos or movies in class. Content from multimedia will be included on exams. Some multimedia will not be posted to Canvas. Hence, it is in your best interest to attend class to engage with the multimedia and discussions to be best prepared for the exams.

We will take some field trips on campus during discussion sections. Content from these field trips also may be included on exams. We also may collect data needed for completion of lab assignments during field trips.

ASSIGNMENTS

Assignments will include three lab reports. YOU ARE RESPONSIBLE FOR KNOWING THE DEADLINES FOR SUBMISSION OF ASSIGNMENTS, WHICH ARE POSTED IN CANVAS.

Late lab assignments will be accepted for 2 weeks after the due date (with the exception of the last lab for which you only have a 1 week grace period), but grades on late assignments will be 50% of the earned grade that would have been given for full credit. Full credit may still be possible if there are extenuating circumstances and I am made aware of them as soon as possible. No late assignments will be accepted more than 2 weeks after the due date, regardless of the reason.

EXAMS

There will be three exams. Any information presented in online lectures, exercises, labs, and materials provided over the course website may be content covered in the exams. The final exam will NOT be cumulative.

Exams will be taken online, on our Canvas website. Each exam will be available for 24 hours, but you will have an allotted time to finish the exam once you start it. The time allotted is noted on each exam. YOU ARE RESPONSIBLE FOR KNOWING THE DATE THE EXAM WILL BE OFFERED ONLINE. IF YOU KNOW YOU WILL MISS AN EXAM, YOU MUST LET ME KNOW AHEAD OF TIME OR NO ACCOMMODATION WILL BE GRANTED.

EXTRA CREDIT

Extra credit opportunities (i.e., online exercise, seminar viewing, class survey) may be offered throughout the semester. Extra credit will be given only for assignment completion during the dates offered. Extra credit points will be added to Participation points. Extra credit assignments will show ‘0 possible points’ but you will be given points greater than 0 for these assignments, based on the number of points listed in the assignment description and your performance. Participation points are weighted as 40% of your overall grade, so completion of extra credit opportunities is a good way to improve your overall grade if you have not done well on labs or exams or have missed taking a chapter quiz.
WITHDRAWAL FROM CLASS

This course is in high demand. Hence, it benefits both you and other students to strongly consider whether you can commit to completing this class before January 20 (the last day for students to add classes). Students can withdraw from classes without penalty by March 3. Students with extenuating circumstances may withdraw from classes after March 3 by submitting a current term petition, available through the college of his/her/their major.

UNEXPECTED LIFE CIRCUMSTANCES

Sometimes unforeseen, extenuating situations in life prevent students from completing quizzes and assignments on time. In such situations, the instructor will reopen chapter quizzes and allow for full credit grading of late assignment submissions, if documentation of an extenuating circumstance can be provided to the instructor.

Resources

If you need help, PLEASE ASK! The course TA and I are happy to assist you. E-mail is the best way to contact either one of us to set up an appointment to meet if you cannot drop by during office hours.

RESEARCH OPPORTUNITIES

As the only institution in the state classified in the highest research category (R1), at the University of Utah you will have access to state-of-the-art research facilities and be able to be part of the knowledge creation process. You will have the opportunity to do research of your own with faculty who are leading experts in their field, engaging in programs that match your research interests. Further, you will interact with and often take classes with graduate students that provide an advanced understanding of the knowledge in your field.

WELLNESS

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. There are excellent resources, often free and confidential, on campus. For more information, contact the Center for Student Wellness (801-581-7776).

LEARNING SUCCESS CENTER

The Learning Success Center (LSC) is an academic support program designed to give students the assistance they need to have a successful academic experience. The program is made up of several components:

- ASUU Tutoring Services
- Supplemental Instruction
- Strategies for College Success (a course [EDPS 2600], free seminars, test anxiety
CENTER FOR DISABILITY SERVICES

The Center for Disability & Access is dedicated to students with disabilities by providing the opportunity for success and equal access at the University of Utah. We are committed to providing reasonable accommodations as outlined by Federal and State law. The Center for Disability & Access is the designated office at the University of Utah which evaluates disability documentation, determines eligibility, and implements reasonable accommodations for enrolled students as guided by Section 504 of the Rehabilitation Act, the Americans with Disabilities Act, and University policy.

LGBTQ RESOURCE CENTER

The LGBT Resource Center seeks to provide a safe environment for students, faculty, staff, alumni, and community members to promote, educate, and develop programs centering on sexual orientation, gender identity and gender expression.

VETERAN’S CENTER

The Veteran’s Center is staffed by student Veterans who are committed to providing their fellow Veterans with the most useful and current information available to assist them with the transition to campus life. The Center maintains relationships with university counseling, tutoring centers, and ASUU to ensure that student Veterans have a personal contact within these organizations when they find that they are in need of services. The Center serves as a drop-in location for study and discussion, as well as a place to develop contacts and friendships among the university's student Veterans.

Legal Matters

ACCOMMODATIONS

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD) to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

ACADEMIC MISCONDUCT

ACADEMIC MISCONDUCT WILL NOT BE TOLERATED. Penalties may include failure of an assignment, the entire course, and/or the filing of formal charges with appropriate university authorities. Academic misconduct includes, but is not limited to, cheating, misrepresenting one’s work, and plagiarism;

• Cheating involves the unauthorized possession or use of information in an academic exercise, including unauthorized communication with another person during an exercise
such as an examination.

• Misrepresenting one’s work includes, but is not limited to, representing material prepared by another as one’s own work or submitting the same work in more than one course without prior permission of all instructors.

• Plagiarism means the intentional unacknowledged use or incorporation of any other person’s work in one’s own work offered for academic consideration or public presentation.

SEXUAL MISCONDUCT

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.
CSBS EMERGENCY ACTION PLAN

BUILDING EVACUATION

EAP (Emergency Assembly Point) – When you receive a notification to evacuate the building either by campus text alert system or by building fire alarm, please follow your instructor in an orderly fashion to the EAP marked on the map below. Once everyone is at the EAP, you will receive further instructions from Emergency Management personnel. You can also look up the EAP for any building you may be in on campus at http://emergencymanagement.utah.edu/eap.

CAMPUS RESOURCES

U Heads Up App: There’s an app for that. Download the app on your smartphone at alert.utah.edu/headsup to access the following resources:

- Emergency Response Guide: Provides instructions on how to handle any type of emergency, such as earthquake, utility failure, fire, active shooter, etc. Flip charts with this information are also available around campus.

- See Something, Say Something: Report unsafe or hazardous conditions on campus. If you see a life threatening or emergency situation, please call 911!

Safety Escorts: For students who are on campus at night or past business hours and would like an escort to your car, please call 801-585-2677. You can call 24/7 and a security officer will be sent to walk with you or give you a ride to your desired on-campus location.
### Lecture & Reading Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Lecture/Reading</th>
<th>Participation Assignment(s)*</th>
<th>Lab Assignments &amp; Exams</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug. 21-25</td>
<td>Welcome video from <em>A Changing Planet</em>; REVEL Chapter: The Science of Sustainability</td>
<td>Syllabus Scavenger Hunt Quiz; Chapter Quiz</td>
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<td>2</td>
<td>Aug. 28-Sept. 1</td>
<td>REVEL Chapter: Science Fundamentals</td>
<td><em>No Chapter Quiz this week</em></td>
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<td>GDE: Understanding &amp; Interpreting Graphs</td>
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<td>3</td>
<td>Sept. 4-8</td>
<td>REVEL Chapter: Biodiversity &amp; Evolution</td>
<td>Chapter Quiz</td>
<td>Lab 1: Biodiversity &amp; Productivity</td>
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<td><em>Section 001 has no class discussion this week</em></td>
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<td>4</td>
<td>Sept. 11-15</td>
<td>REVEL Chapter: Populations &amp; Communities</td>
<td>Chapter Quiz; GDE: Population Growth Rates</td>
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<td>5</td>
<td>Sept. 18-22</td>
<td>REVEL Chapter: Ecosystems &amp; Biomes</td>
<td>Chapter Quiz; GDE: Climate &amp; Biomes</td>
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<td>6</td>
<td>Oct. 2-6</td>
<td>REVEL Chapter: Biogeochemical Cycles</td>
<td>Chapter Quiz; GDE: Variations in CO$_2$ concentrations</td>
<td>Exam 1 – Friday, Oct. 6 (Canvas) (topics covered in weeks 1-6)</td>
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<td>7</td>
<td>Oct. 9-13</td>
<td><strong>FALL BREAK</strong></td>
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<td>8</td>
<td>Oct. 16-20</td>
<td>REVEL Chapter: Energy Use</td>
<td>Chapter Quiz; GDE: Energy Use</td>
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<td>Oct. 23-27</td>
<td>REVEL Chapters: Non-renewable &amp; Renewable Energy Resources</td>
<td>Chapter Quizzes (2); GDE: Electricity from Renewable Sources</td>
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<td>Week</td>
<td>Date</td>
<td>REVEL Chapters:</td>
<td>REVEL Chapter:</td>
<td>Lab 2: Food Production, Virtual Water, &amp; Energy Use</td>
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<td>10</td>
<td>Oct. 30-</td>
<td>Agriculture &amp; Land Use</td>
<td>Freshwater; Additional video: Utah’s Uncertain Water Future</td>
<td>Chapter Quizzes (2)</td>
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<td>Nov. 3</td>
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<td><strong>Field Trip: Edible Organic Garden</strong></td>
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<td>Nov. 6-10</td>
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<td>16</td>
<td>Dec. 11-15</td>
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*GDE stands for Guided Data Exploration*