Using Experiential Learning to Enhance Student Engagement

By Prof. Peter Newton

An Environmental Studies professor designs an undergraduate-level critical thinking course on Sustainable Food Systems to promote engaged student learning.

Background

ENVS 3525-002 Sustainable Food Systems is a mid-level undergraduate course that aims to develop critical thinking skills and environmental problem analysis abilities among Environmental Studies (ENVS) students. It is one of several ENVS 3525 ‘cornerstone’ courses offered each year - these vary with respect to their thematic foci, but all share a core aim of environmental problem analysis, employing an interdisciplinary approach that considers the science, policy, and values dimensions of topical environmental issues.

In designing this course, I aimed to create a new, comprehensive undergraduate food systems course that promoted engaged student learning. I wanted to design a course that was built around participatory classroom time, and engaged experiential learning assignments. My hope was that this course would achieve its core aims of developing critical thinking skills and a nuanced understanding of food system sustainability in a manner that was engaging for students.

Implementation

My course design aimed to create opportunities for engaged student learning. Several elements of the course were specifically designed to achieve this goal, including experiential learning assignments, guest speakers, and a field visit.

1. Experiential learning assignments - these aimed to connect students to food systems in ways that more traditional academic assignments might not.
2. Guest speakers - I invited multiple guests into the classroom, from academia, non-profit organizations, and the private sector.
3. Field visit - I arranged a class visit to Black Cat Farm, just outside Boulder; this demonstrated the realities of a range of issues that we had touched on in class.

Student Work

The quality of student work was generally very high, and I was pleased with how they responded to the experiential learning assignments. Their submitted work indicated a high degree of engagement, comprehension, and learning.

I used an Engaged Student Learning index to collect pre- and post-course data from my students, to study whether the incorporation of experiential learning methods enhanced engaged student learning in this course. The study offers tentative evidence that experiential learning assignments and exposure to expert guest speakers may enhance engaged student learning. Students reported greater engagement with the ENVS 3525-002 Sustainable Food Systems course than other ENVS courses with respect to all fifteen dimensions tested by the Engaged Learning Index.

Reflections

Overall, I think the course was successful in enhancing engaged student learning around the topic of sustainable food systems. This belief is supported by the evidence presented in the previous sections. In particular, student feedback on the experiential learning assignments was extremely encouraging. However, I intend to continue to refine and improve the course in future iterations of it.

Background

The course ENVS 3525-002 Sustainable Food Systems aims to develop critical thinking skills and environmental problem analysis abilities among Environmental Studies (ENVS) students. It is a mid-level undergraduate course in the ENVS Program; most enrolled students are juniors or seniors. It is one of several ENVS 3525 'cornerstone' courses offered each year; it is mandatory for all ENVS students to take one of these cornerstone courses as part of their ENVS degree. The 3525 courses vary with respect to their thematic foci, but all share a core aim of environmental problem analysis, employing an interdisciplinary approach that considers the science, policy, and values dimensions of topical environmental issues. I have taught this course twice: in Fall 2015 and Fall 2016. On both occasions, there have been approximately 50 students enrolled in the course.

The objectives of the ENVS 3525-002 Sustainable Food Systems course are to:

1. **Develop students' critical thinking skills**, through the lens of food systems
2. **Enhance students' understanding** of the complexities of food systems
3. **Enable students to actively engage** with food systems, through experiential learning opportunities

The intention is that by the end of the course students will have:

1. **Developed their critical thinking skills** by:
    1. ***Critically evaluating evidence*** that supports or contradicts common and competing claims and beliefs about food systems
    2. ***Challenging their perspectives***, through exposure to a diversity of food systems, policy positions, and values
    3. ***Exploring synergies and trade-offs*** that arise at the intersection of the science, policy, and values of different food systems
2. **Enhanced their understanding** of:

    1. The *environmental, social, and economic dimensions* of food system sustainability
    2. The *impacts* of food systems, at multiple scales, domestically and internationally
    3. The potential for proposed food system *solutions* to enhance environmental sustainability
3. **Engaged with food systems** by:
    1. ***Actively participating*** in a food system, through volunteering
    2. ***Reflecting*** on the ethics of food systems
    3. ***Exploring ideas*** of food system sustainability that are new to them

The course is separated into three thematic sections. The first section focuses on problem identification: it provides an introductory overview of some key contemporary food system challenges, at a global scale – for example, illustrating how food systems affect land, water, and greenhouse gas emissions. The second section, which forms the majority of the course, focuses on solutions: it examines the evidence and rationale behind proposed alternative approaches to enhancing food system sustainability. Topics include land use, organic agriculture, genetically modified food, local food, animal agriculture, and food waste. The third and final section provides a synthesis of the ideas discussed throughout the course, returning to the central question of what a sustainable food system is, and how it can be achieved.

In designing this course, I aimed to create a new, comprehensive undergraduate food systems course that promoted engaged student learning. I wanted to avoid a lecture-style course with traditional academic paper-writing assignments and exams. Instead, I wanted to design a course that was built around more participatory classroom time, and more engaged experiential learning assignments. In class time, I designed small-group activities, invited multiple guest speakers with diverse perspectives, and arranged a field trip. Outside of class time, I designed experiential assignments that required students to actively engage with food systems in different ways. I explain these design features in more detail in the Implementation section.

My hope was that this course would achieve its core aims of developing critical thinking skills and a nuanced understanding of food system sustainability in a manner that was engaging for students. To assess their engagement in this course relative to other Environmental Studies courses, I collected and analyzed data from students before and after the first iteration of this course in Fall 2015. I discuss these data in more detail in the Reflection section.

Implementation

My course design aimed to create opportunities for engaged student learning. Several elements of the course were specifically designed to achieve this goal, including experiential learning assignments, guest speakers, a field visit, and the use of innovative in-class learning software.

Experiential learning assignments

I designed experiential learning assignments that required students to:

1. Volunteer with a food-related organization in the Boulder area, for a minimum of eight hours
2. Define and eat a more ethical and/or sustainable diet for a week
3. Publish blogposts on topical food issues on a class blog, and critique each other's posts
4. Write a small grant proposal as a group project.

Each of these assignments was designed to connect students to food systems in ways that more traditional academic assignments might not.

Guest speakers

I invited multiple guest speakers into the classroom (seven in the first iteration of this course; nine in the second), from academia, non-profit organizations, and the private sector. Each guest speaker gave widely varying perspectives on different dimensions of sustainable food systems, and exposed students to 'real-world' challenges and careers. I encouraged students to listen to these guest speakers critically, and to apply the principles of evidence-based decision-making and rational argumentation that we had discussed in other classes.

Field visit

I arranged a class field visit to Black Cat Farm, just outside Boulder. The visit was optional, because scheduling constraints meant that we had to hold it outside of normal class time. World-renown chef and farmer Eric Skokan gave students a tour of the farm, and provided an excellent insight into the complexities of operating a farm-to-fork business. The field trip covered a range of issues that we had touched on in class: organic farming, local food systems, integrated crop-livestock systems, and irrigation systems and water conservation. My hope was that seeing and hearing about the challenging practical realities of dealing with these issues would add an extra dimension to the students' learning.

Learning software

Throughout the first iteration of this course (Fall 2015), I used a software called Nearpod to encourage greater student participation in class. This was an interesting experiment in using technology in the classroom, but I do not plan to use it in this class again. Its advantages were that it enabled real-time assessment of student comprehension of the course material, and that it provided some anonymity and shelter behind which students could express ideas when they might have otherwise been too intimidated to speak in front of a class of 46 other students. Many students expressed these sentiments in their feedback to me, and liked using Nearpod for these reasons. However, it had the following drawbacks: it made it easy and tempting for students to use their laptops, IPads, phones, and other devices for non-class purposes; the software was sometimes slow to display responses on the screen after students had shared them (leading to awkward pauses in the flow of the class); and it was difficult for me to rapidly screen student short-answer responses in real time.

Student Work

The quality of student work, and their feedback on the course, gave me some confidence that the course achieved the objectives that I set. I had not taught the course before, and so had no expectations for the final grade distribution, but the majority of students (37/47) achieved an 'A' or 'A-' grade, and only one student failed the course (as a result of non-submission of critical assignments). I received excellent feedback from the students, both in quantitative (FCQ scores were higher-than-average for both department and division: 5.2 and 5.5 for 'course overall', and 5.6 and 5.7 for 'instructor overall', in 2015 and 2016 respectively) and qualitative terms.

The quality of student work was generally very high, and I was pleased with how they responded to the experiential learning assignments. Their submitted work indicated a high degree of engagement, comprehension, and learning. I include here examples of the volunteering assignment, and ethical eating assignment (at end of document). The blog posts are public. One group submitted their grant proposal to Sustainable CU, and their proposal (to incorporate information about composting in the new student orientation material) was funded.

I also assessed the extent to which the course enhanced engaged student learning in a more systematic fashion, as I describe below.

Assessing Engaged Student Learning

Introduction

Enhancing engaged student learning is a priority among many higher education educators. Students report higher levels of engagement and learning "at institutions where faculty members use active and collaborative learning techniques, engage students in experiences, emphasize higher-order cognitive activities in the classroom, interact with students, challenge students academically, and value enriching educational experiences" (Umbach and Wawrzynski 2005).

I was awarded a course design grant to help develop this course, and to collect data on whether the course design was successful in enhancing engaged student learning. This section presents an analysis of data collected in response to the question: Can the incorporation of experiential learning methods enhance engaged student learning, in an undergraduate course on the topic of Sustainable Food Systems?

Methods

I conducted this study during the first iteration (Fall 2015) of this class. Forty-seven students were enrolled; all were juniors or seniors, all with a declared major in Environmental Studies.

Students were twice offered the opportunity to complete an anonymous online survey: once in the second week of the semester, and once approximately one month after the course finished. Both surveys tested student engagement using an Engaged Learning Index, adapted from that developed by Schreiner and Louis (2006). Fifteen questions about student engagement required responses on an ordinal scale of 1–5, where 1 was 'strongly disagree', 2 was 'disagree', 3 was 'neither agree nor disagree', 4 was 'agree', and 5 was 'strongly agree'. Questions 1-11 were 'positive' questions that asked about engagement: responses of 5 thus indicated greater reported engagement than did responses of 1. Questions 12-15 were 'negative' questions that asked about lack of engagement: responses of 5 thus indicated lower reported engagement than did responses of 1. The scores for questions 12-15 were thus reversed (i.e. 5 became 1; 1 became 5; etc.) to make all responses comparable.

In the initial survey, the questions pertained to the average of the student's experiences across all ENVS classes that they have taken to date; in the follow-up survey, the same questions pertained to the student's experiences in the ENVS 3525-002 Sustainable Food Systems class that they took in Fall 2015. You can see the complete pre-course surveys and post-course surveys (at end of document).

Twenty-six students completed both surveys, creating a panel data set that enabled paired comparisons of student responses with respect to ENVS classes in general and to the case study ENVS 3525-002 Sustainable Food Systems course in particular. Paired t-tests were used to analyze the differences between the two sets of responses.

Results

Students reported being more engaged by the ENVS 3525-002 Sustainable Food Systems course than by the average of all ENVS courses that they had previously taken. Across all 15 questions about student engagement, students reported a mean ± SD score of 3.65 ± 0.42 for the average of all ENVS courses, and 4.38 ± 0.50 for the SFS course ($N = 26$, $P < 0.001$). The mean scores were higher (indicating greater reported engagement) for all fifteen questions in relation to the ENVS 3525-002 Sustainable Food Systems course versus the average of all ENVS courses. These differences were statistically significant ($P < 0.05$) with respect to seven questions (questions 5, 10, 11, 12, 13, 14, and 15; see the Engaged Learning Post-Course Survey at the end of this document for details of these questions. The differences were not statistically significant for the remaining eight questions.

Qualitative responses from students shed light on the elements of the course that were successful in engaging students. Visiting guest speakers were valued for the diverse perspectives that they offered, their enthusiasm and passion about their topics, and the insights that students gained about careers in food systems:

- "The guest speakers most enhanced [my] interest because they put faces to people in the industry. They were all extremely devoted and passionate about different things surrounding food. It made my interest grow because they were SO interested."
- "The visiting speakers made me realize so much more than I knew was imaginable. It made me want to inform my friends and change my ways."

The assignment that required students to volunteer with a local food-related organization was valued for the exposure it gave students to real-world food system challenges:

- "[The] volunteering assignment got us out of our comfort zone and actively doing what we were learning"
- "The hands on experience with a farm taught me things not possible to learn in a classroom"

The assignment that required students to define 'ethical eating', to eat ethically for a week, and to reflect on that experience was valued for stimulating students to examine their values and behaviors:

- "The ethical eating [assignment] really made me think and describe why I changed my diet how I did. It influenced what foods I now buy based on seasonality and [I] have mainly cut out dairy as well as already being a vegetarian."
- "[The] ethical eating assignment made me think more in-depth about my consumer choices"
- "The ethical eating assignment challenged my beliefs and made me question what is important to my ethics"

The blog assignment was less commonly reported to have been the most influential element of the course. The survey did not explicitly ask about the field visit or the use of Nearpod, in terms of their influence on student engagement.

Discussion

This study offers tentative evidence that experiential learning assignments and exposure to guest speakers who are practitioners and/or experts in a topic may enhance engaged student learning. Students reported greater engagement with the ENVS 3525-002 Sustainable Food Systems course than other ENVS courses with respect to all fifteen dimensions tested by the Engaged Learning Index.

However, the study is constrained in the extent to which it can draw definitive conclusions. First, the study was not able to quantitatively disentangle the effectiveness of different elements of the course in promoting more engaged student learning. That is, the effects of the experiential learning assignments and guest speakers (and indeed, those of the field visit and interactive, participatory classroom technology (Nearpod)) were unavoidably confounded in the quantitative data. However, the qualitative data do provide insights into the effects of each of these elements on the student experience.

Second, there was no means of controlling for any intrinsic effects of the study topic of the case-study course (Sustainable Food Systems) relative to the topics covered by other ENVS courses. If the topic itself was more interesting or engaging than the topics covered by the other ENVS courses that students had previously taken, then that alone could produce the result observed. However, the qualitative data again suggest that the specific experiential assignments and exposure to guest speakers did have their intended effect of enhancing student engagement.

References

Schreiner, L. A., & Louis, M. (2006). Measuring engaged learning in college students: Beyond the borders of NSSE. In: Annual Meeting of the Association for the Study of Higher Education, Anaheim, CA.

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. Research in Higher Education, 46(2), 153-184.

Reflections

Overall, I think the course was successful in enhancing engaged student learning around the topic of sustainable food systems. This belief is supported by the evidence presented in the previous sections. In particular, student feedback on the experiential learning assignments was extremely encouraging.

One challenge that has constrained the extent to which I can develop the course as a truly interactive and engaging student experience has been its size. The number of students that can enroll in the course is capped at 75 students; I had approximately 50 students in each of 2015 and 2016. I have tried to avoid extensive lecture-style presentations of material, and have usually limited such content to 15-20 mins at a time. Instead, I have used small-group activities, pair-shares, and break-out groups to catalyze discussion and idea-sharing, facilitated by the Teaching Assistant and me. Nonetheless, this larger class size has made interactive and engaging activities built around class discussion more difficult than if the class were capped at 20-25, and could be facilitated as a seminar-style course.

I have made, and plan to make, a couple of adjustments to the course in these first iterations. First, I am glad I tried using the Nearpod technology in Fall 2015, but for the second iteration of the course (Fall 2016) I instead: a) used PowerPoint slides; b) focused on creating a classroom environment in which all students felt comfortable sharing their ideas in front of others; and c) set short-answer reading reflections ahead of the class, to give myself more time to go over them and assess which topics need greater class time devoted to them.

Second, I plan to restructure the blogpost activity to better address the other key objective of the course, which is to develop critical thinking skills. Rather than have students write two or three blogposts, I intend in future iterations of the course to have them write just one, but for them to adjust it and improve it in response to critical feedback from their peers, TA, and instructor. I think that this will enable students to spend time developing a compelling, well-reasoned, and well-supported argument.

ENVS Cornerstone 3525-002 Syllabus
Fall 2016

Sustainable Food Systems

Professor **Peter Newton**

Email **peter.newton@colorado.edu**

Lessons **Tues and Thurs, 12:00 – 1:15pm**

First lesson **Tues 23 August, 2016**

Room **SEEC N124**

COURSE DESCRIPTION

The UN predicts that world food demand will increase by 70% by 2050, relative to current levels. Given the already-high environmental and social impacts of food systems globally, how can such large growth in food production be achieved in a more sustainable manner? This course will first examine the broad environmental and social costs of the current food system, and then explore the opportunities and challenges for alternative (or modified) models of food production and consumption. Can organic feed the world? Should we buy local? What contribution might GMOs make? What is the impact of animal agriculture on the environment? What dietary changes are needed and expected? In all cases, we will ask: what is the best available evidence that these ideas can enhance food system sustainability; do these potential solutions offer environmental gains or losses; can they be scaled up; and what are the changes in science, policy, and values that would better-enable that process? The course aims to develop critical thinking skills and food literacy, and will encourage engaged student learning. Class time will involve a combination of seminars, discussions, readings, activities, visiting speakers, and field trips to explore the theme of sustainable food systems. Assessment will be based on a number of experiential assignments that will help you to engage with the food system: by volunteering, eating ethically, participating in a class blog, and writing a grant proposal.

LEARNING OBJECTIVES

The objectives of this course are to:

1. **Develop critical thinking skills**, through the lens of food systems
2. **Improve your food literacy, and enhance your understanding** of the complexities of food systems
3. **Actively engage with food systems**, through experiential learning opportunities

As such, by the end of the course you will have **developed your critical thinking skills** by:

a. ***Critically evaluating evidence*** that supports or contradicts common and competing claims and beliefs about food systems

b. ***Challenging your perspectives***, through exposure to a diversity of food systems, policy positions, and values

c. ***Exploring synergies and trade-offs*** that arise at the intersection of the science, policy, and values of different food systems

By the end of the course, you will also have an **enhanced understanding** of:

a. The ***environmental, social, and economic dimensions*** of food system sustainability

b. The ***impacts*** of food systems, at multiple scales, domestically and internationally

c. The potential for proposed food system ***solutions*** to enhance environmental sustainability

Finally, by the end of the course, you will also have **engaged with food systems** by:

a. ***Actively participating*** in a food system, through volunteering

b. ***Reflecting*** on the ethics of food systems, and modifying your eating habits accordingly

c. ***Exploring ideas*** of food system sustainability that are new to you

COURSE MATERIALS

Course documents, including required readings, will be posted on the D2Learn course website (https://learn.colorado.edu) throughout the semester, and **you should frequently check this site for updates**. All readings will be accessible through CU libraries or D2Learn, or will be available freely on the internet. Readings will include peer-reviewed journal articles, grey literature, mainstream media articles, videos, and book chapters.

EVALUATION

The course is worth three credits towards the ENVS major. These credits are attributed according to the following criteria:

Participation & attendance [10%]

The course will be oriented around participatory learning, including interactive classroom activities. The success of the course as a student learning experience depends on full participation by all students. Credit will be earned by active engagement in every class activity and discussion. A classroom of participants ready to discuss, ask questions, and offer ideas will make this a more useful and enjoyable experience for everyone. Therefore, **please be an active participant in class**. Active participation involves paying attention, asking questions, offering critical reflection on the material, and participating in group discussions.

Participation will be graded based on the following criteria: 9-10% – Regularly makes substantive contributions during class; 8% – Sometimes makes substantive contributions during class; 7% – Attentive, but makes fewer contributions during class; 6% – Sometimes attentive, but makes little to no contribution during class; ≤ 5% – Rarely attentive, or disrespectful during class.

You are expected to attend each lesson and sign in. You may miss lessons without penalty only if these absences are advised and explained by email, ideally before the lesson begins. **Each unexplained absence will result in a partial loss the grade (1% of the final grade for each part of 1% of lessons missed).** You are strongly encouraged to attend the TA *and* professor office hours at least once during the course.

Reading reflections [10%]

A key part of being able to contribute to class discussions is completing the assigned readings diligently and timeously. Each assigned reading will be accompanied by 2-3 specific questions to guide your reading. This part of the grade will be assigned for completing very short reflections on the readings for each class. You should simply post your brief responses to the set questions, together with any questions or doubts you had about the readings, to DropBox on D2L by 8am on the day of the class. They will be an invaluable way for me to understand which parts of the readings we need to cover in greater depth in class. You may skip up to five of these reflections without penalty.

Experiential learning assignments [45%]

An emphasis of this course is on experiential learning – enhancing knowledge and understanding through 'hands-on' participation. Three key assignments will be completed throughout the semester: 1) a volunteer learning assignment, 2) an ethical eating assignment, and 3) a blog post assignment. Details of all three assignments will be explained in the first week of class, and details will be posted separately on D2L.

1. ***Volunteer learning assignment*** [15%] – Throughout the semester, you will be required to volunteer for a food related organization for a minimum of eight hours. The organization can be of your choosing so long as a) it deals with food at some point in the supply chain, and b) you are not currently engaged with that organization. You will submit a journal that reflects on your experience.
2. ***Ethical eating assignment*** [15%] – First, you will define what it means to eat ethically. Second, you will commit to a week of eating more ethically. You will then submit a short paper that analyzes this experience.
3. ***Course blog posts*** [15%] – Throughout the semester, you will write a least two blog posts related to sustainable food systems, and comment on at least three different blog posts written by other students.

Cornerstone project [30%]

Your cornerstone project assignment is to work in groups of three or four to create a project proposal, responding to a Request for Proposals for the Small Grants Program of the *Environmental Improvement Initiative* of *Sustainable CU*, which addresses an issue around food sustainability on the CU campus. You will prepare a final written project proposal, and pitch the project proposal to the rest of the class in the final week of the course. Full details of the project will be explained in the first week of class, and details will be posted separately on D2L.

Class reflections [5%]

The final course requirement is the completion of two reflections that report your thoughts about a) readings, seminars, and activities that stood out as particularly useful or that formed critical learning moments; and b) aspects of the course that did not work so well, and why.

COURSE POLICIES

Assignments: format

All written assignments should be typed using 12-point, Times New Roman font, with 1.5 line spacing, using normal (1") margins, and saved as a Word (.doc or .docx) document (***not*** as a PDF).

Assignments: submission

All written assignments should be uploaded to DropBox on D2L before 12:00pm (noon) Mountain Time on the day that they are due. Assignments submitted after that time will be counted as late. Assignments may lose 10% of the grade for that assignment for any part of each 24 hour period after the deadline.

Email policy

More minor questions should be emailed to Amy Quandt; more major queries and problems should be emailed to Peter Newton. In all cases, **please use the subject line 'ENVS 3525 <*fill in specific query*>'**. Please write clearly and succinctly and allow up to 72 hours for a response. You should maintain and check your CU email account regularly, in accordance with CU policy.

Laptops, tablets, and cell phones

Use of laptops and tablets during class time should be limited to specific tasks (e.g. group work), and not used for note-taking. Screens can be distracting to you and to those around you, and will likely detract from the student learning experience. Cell phones may not be used during class time, and should be silenced or turned off.

UNIVERSITY POLICIES

Accommodation for disabilities

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with your professor.

Religious holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See campus policy regarding religious observances for full details.

Classroom behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the student code.

Discrimination and harassment

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been discriminated against should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or the Office of Student Conduct and Conflict Resolution (OSC) at 303-492-5550. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be found at the OIEC website. The full policy on discrimination and harassment contains additional information.

Honor code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited touniversity probation, suspension, or expulsion). Additional information regarding the Honor Code policycan be found online and at the Honor Code Office.

COURSE SCHEDULE (*PROVISIONAL – **please check individual lesson handouts on D2L** from week-to-week*)

Day	Date	Week	Class	Theme	Topic	Guest speaker
Tue	23-Aug	1	1	Introduction	Introduction to the course	
Thurs	25-Aug		2		Interdisciplinarity; sustainable food systems	
Tue	30-Aug	2	3		Critical thinking; food system trends	
Thurs	1-Sep		4		Forests & food	Amy Quandt (Environmental Studies Program)
Tue	6-Sep	3	5	Challenges	Environmental challenges of food systems I - land use and biodiversity	
Thurs	8-Sep		6		Environmental challenges of food systems II - greenhouse gas emissions	
Tue	13-Sep	4	7		Environmental challenges of food systems III - water	
Thurs	15-Sep		8	Solutions?	Critical thinking; project development	
Tue	20-Sep	5	9		Organic agriculture	
Thurs	22-Sep		10		Animal feed: insects, oceans, and food waste	Phil Taylor (Mad Agriculture)
Tue	27-Sep	6	11		Land use: land sparing and land sharing	Amy Quandt (Environmental Studies Program)
Thurs	29-Sep		12		GMOs I - The science of GMOs and organic	
Tue	4-Oct	7	13		GMOs II - Social & ethical considerations	Lindsay Diamond (Environmental Educator)
Thurs	6-Oct		14		GMOs III - Boulder County Open Land policy	
Tue	11-Oct	8	15		Local food I - The science of localism	
Thurs	13-Oct		16		Local food II - Policy & values	

Day	Date	Week	Class	Theme	Topic	Guest speaker
Tue	18-Oct	9	17		Local food III - Local food in practice	Brian Coppom (Boulder County Farmers' Markets)
Thurs	20-Oct		18		Animal agriculture I - Animal agriculture and the environment	
Tue	25-Oct	10	19		Animal agriculture II - Factory farming	Claudia Lifton (Factory Farming Awareness Coalition)
Thurs	27-Oct		20		Animal agriculture III - Plant-based diets and health	Jackson Long (Thought for Food podcast) & Sage Canaday (elite ultrarunner)
Tue	1-Nov	11	21		Animal agriculture IV - The ethics of eating meat	Alastair Norcross (Department of Philosophy)
Thurs	3-Nov		22		Food waste I - The science	
Tue	8-Nov	12	23		Field trip	Black Cat Farm
Thurs	10-Nov		24	Conclusions	Food waste II - Policy	Xavier Rojas - founder of Boulder Food Rescue
Tue	15-Nov	13	25		What is a sustainable food system? I	
Thurs	17-Nov		26		What is a sustainable food system? II	
Tue	22-Nov	14			*Fall Break*	
Thurs	24-Nov				*Fall Break*	
Tue	29-Nov	15			*No class - work on cornerstone projects*	
Thurs	1-Dec				*No class - work on cornerstone projects*	
Tue	6-Dec	16	27		Student presentations	
Thurs	8-Dec		28		Student presentations	

ASSIGNMENT I – LEARNING BY VOLUNTEERING

Introduction

Food touches our lives in many ways that we are aware of, and many ways that go unnoticed. The complex interactions between production, distribution, and consumption that make up a food system are often difficult to understand or appreciate, be it as a consumer, or as a student in this class. One way to better understand a food system is to actively participate in it.

Assignment

This course aims to emphasize hands-on, experiential learning. Therefore, for this assignment you are asked to volunteer for a food related organization. The organization can be of your choosing so long as a) it deals with food at some point in the supply chain, and b) you are not currently engaged with that organization. Options include a farm, garden, educational organization, food co-op, food security NGO, food rescue organization, student group, farmer's market, restaurant, or feed lot. An accompanying spreadsheet ('Boulder food organizations with volunteer opportunities') is accessible on D2L, via a link to a Google doc, and contains a (not exhaustive) list of many different organizations and/or projects that you may be able to volunteer for. Please feel free to choose an organization that is not on this list, and/or to let the instructor or the TA know of other organizations that could be added to this list. Note that **we have <u>not</u> approached any of these organizations in relation to this assignment – when you first make contact, you will need to introduce yourself, and <u>ask if it is possible</u> to volunteer with the organization**.

We do not want to overburden one organization with too many students. Therefore, please **indicate on the Google doc which organization you are hoping to do your volunteer work with**, and do not approach an organization for which three people have already signed up. Please confirm on the Google doc once you have arranged your volunteer opportunity.

Interim deadline

Please confirm your volunteer opportunity, and indicate it on the Google doc, by **noon on Wednesday September 21st**.

Volunteering

You are required to set up your volunteer arrangement yourself and to **get your hours signed-off by a supervisor**. You should **volunteer for a minimum of eight hours** over the course of the semester. This can be in a single day, or spread over multiple weeks. Feel free to volunteer for more hours than this, if you like – in the past, some students have become closely involved with the organizations they volunteered for. It is preferable to complete all of your hours with one organization, in order to understand the work of that organization well. However, you are welcome to split your hours across multiple organizations, if that is necessary for any reason.

Journal reflection

After your volunteer hours are complete, you should **submit a journal that reflects** on your experience.

First, in no more than 200 words:

1. Which organization did you volunteer with and what were your volunteer activities within it? Please attach a signed statement from your supervisor, to corroborate this statement.

Second, in no more than 1500 words, address the following three questions:

1. What did you learn about the food system and about yourself through this experience? What was the most surprising or memorable learning outcome?
2. What was particularly challenging about this experience? What was particularly rewarding?
3. How does the organization you volunteered for, and the work that you did, relate to the issues and topics that we have been studying in this course? Were there any contradictory conclusions (e.g. did something we discuss in class not hold true for the organization)? Did you re-examine your position on any topics as a consequence of volunteering for this organization?

Finally, share a photo of you engaged in your volunteering activity, together with a descriptive caption that give an insight into what you did, and/or what you learned.

Deadline

Share a photo and caption at any time in the semester – the sooner the better.

Please complete this assignment, and submit the journal on D2L before **noon on Wednesday November 2nd**.

Important expectations for volunteering

When you go out into the community, you will not only be representing yourself, you will be representing the University of Colorado Boulder and this class. We would also like the organization to accept CU students as volunteers in future years. Please be mindful of this and maintain professionalism throughout your volunteer experience. Professionalism includes, but is not limited to:

- **Communication** – ensure that any emails or phone calls that you make to the organization are framed in a professional manner, using appropriate grammar, spelling, and salutations.
- **Attire** – please show up to your volunteer duties dressed appropriately.
- **Work ethic and timeliness** – while you are volunteering, please display a hard work ethic and contribute to the task you have been assigned. Do not be late!
- **Follow-up** – after you have completed your volunteer hours, please send a follow-up email thanking the organization for hosting you.

Rubric

	3	2	1	0
Reflection – evidence of personal development	You demonstrate a deep and thoughtful reflection on how the experience benefited or challenged you as an individual and as a food-systems student; and what your learning outcomes were.			Your reflection is superficial, with little insight as to how the experience of volunteering benefited or challenged you; no discussion of your learning outcomes.
Reflection – evidence of relating the experience to the class	You make meaningful connections between the reality of food system you were working in and the theory and evidence discussed in class.			You fail to make meaningful connections between the reality of the food system you were working in, and the theory and evidence discussed in class.
Writing – length, structure, spelling, grammar, punctuation	Well-written; appropriate length.			Poorly written; too long or short.

ASSIGNMENT II – ETHICAL EATING

> "Food issues and choices are very often ethical issues and choices. They concern rights, justice, power, autonomy, control, sustainability, animal welfare and human well-being. The claims that people make about them are prescriptive – they are about what we should do, as well as about which food systems and policies we should support. Should we eat animals? Should we eat local? Should we embrace genetically modified crops? Should we help address global malnutrition [or global hunger]? As a result, they involve views about what matters, what has value, what principles we should live by, and what ideals we should strive for. We cannot make good choices about food consumption, food policy or food systems without attending to food ethics."
>
> (Sandler, R. (2014). *Food Ethics: The Basics*. Routledge, p. 2).

Introduction

In this course, we are thinking and learning about the consequences and inherent trade-offs of individual and collective choices within our food system. But what does this mean for you? What do you believe to be of highest import and priority in creating a sustainable, ethical food system? What principles and values do you think we should we live by in our food policies and how can these be enacted through our everyday food choices?

Assignment

First, you will define what it means to eat ethically. Second, you will commit to a week of eating more ethically.

1. **Define what ethical eating means to you.** Think deeply about this, and draw on the course textbook (Thompson 2015 and/or Singer & Mason 2007) and – if you wish – other books and papers that address food ethics (e.g. see D2L in the Assignment II folder for some resources) to decide what ethical eating means to you.
2. **Commit to eating more ethically for at least one week.** You can choose to eat according to your comprehensive definition of 'ethical eating', or you can choose to isolate one dimension of ethical eating and focus on that. For example, you could focus on the ethics of eating meat (e.g. by eliminating meat and dairy); or the ethics of localism (e.g. by buying only locally-produced food); or the ethics of food waste (e.g. by committing to zero-waste or packaging); or the ethics of the SNAP (food stamps) (e.g. by living on a SNAP budget). Do not do anything illegal or unhealthy.

Throughout the week, think and keep notes about what you ate each day, how you felt, and the challenges or successes that you experienced. On at least one occasion, you should prepare a meal for, or with, a friend or classmate. You should use the opportunity to discuss your food choices, and encourage them to challenge or critique your definition of ethical eating.

Report

You will then submit a short paper that describes and analyzes these experiences, and which contains two sections that correspond to the two tasks above:

1. **Define what ethical eating means to you** (750-1000 words). Your report should respond to the following two sets of questions:
    a. What is your definition of 'ethical eating'? Why did you decide on this definition?
    b. What are the potential critiques or arguments against your definition of ethical eating? What is your response to these challenges?

    In responding to these two questions, refer to one or more arguments from Thompson (2015) and/or Singer & Mason (2007) that you find particularly compelling, or which you disagree with.
2. **Discuss your effort to eat more ethically** (750-1000 words). Your report should respond to the following two sets of questions:
    a. Briefly state what change(s) you made to your eating habits for this assignment.
    b. Why did you choose this/these change(s)?
    c. Is it possible, easy, or difficult to eat ethically in this manner?
    d. Have you been affected by your experience of trying to eat in this manner for at least a week? If so, how?
    e. What are the costs and benefits of eating more ethically in this manner: for you personally, and for society generally?

Use class materials, readings, and other sources to support your argument and analysis.

Cite 3-5 references in your paper, and provide the full bibliographic details of these in a section (not included in the word count) at the end of your paper.

Deadline

Please complete this assignment, and submit the paper on D2L before **noon on Wednesday November 16th**.

Rubric

	3	2	1	0
Commitment (20%)	You wholeheartedly engaged in this experiential learning assignment, and confronted the challenges, inconveniences, and surprises that arose			You only weakly or superficially engaged in this experiential learning assignment
Analysis (40%)	You defined ethical eating rigorously; identified possible critiques of your definition; and responded to those critiques in a compelling manner, using evidence and arguments from the course book(s)			You failed to convincingly define ethical eating; failed to identify critiques of your definition; failed to respond to those critiques; and/or failed to use evidence and arguments from the course book(s)
Reflection (40%)	You reflect fully and thoughtfully in response to the questions posed when asked to 'discuss your effort to eat more ethically'			You reflect superficially or inadequately in response to the questions posed when asked to 'discuss your effort to eat more ethically'

ASSIGNMENT III – SUSTAINABLE FOOD BLOG

Introduction

Blogging is one of the most widespread formats within the social media realm with which to discuss and engage in current events. Responding critically to blog posts and other online media articles is also an important form of engagement in debates about controversial contemporary topics. The objectives of this assignment are 1) to help you develop familiarity and experience with blogging and online commentary as a medium of communication, 2) to encourage you to discuss and engage with the course outside of the classroom, and 3) to allow you to explore topics not directly covered in the classroom, but of interest to you.

Assignment

- As a class, we will create content for the Wordpress blog https://cubouldersustainfood.wordpress.com, and use that content as the basis for online conversation about topics around the theme of 'sustainable food systems'.
- Throughout the semester, **write two blog posts**, each of which should cover a topic of interest to you within the field of sustainable food systems. Each blog post should be a substantive, stand-alone entry that refers to contemporary events, issues, and/or complexities related to your chosen topic. The two blog posts may be on a similar topic, or may address completely different topics.
- Additionally, **contribute to the online discussion, by commenting and engaging in debate on blog posts by at least four different students**, at any point in the semester. As a commentator: be respectful, but feel free to support, questions, critique, or challenge what you read. As a poster: respond to *all* comments on your blogpost, thoughtfully and comprehensively.

Guidance

The **blog posts should be explanatory, analytical, or critical.** Do *not* write pure opinion pieces. Thus, while it is fine to promote a particular perspective (e.g. that organic food is healthier; or that GMOs are critical to global food security) you need to provide clear arguments, evidence, critical analysis, and citations throughout the post. The **blog posts also need to be synthetic**. That is, do *not* simply paraphrase or report on one article or idea. Rather, synthesize ideas or material from a range of sources.

Evaluation

Your posts will be evaluated for a) content, b) quality, and c) format (including grammar, punctuation, and spelling). This assignment is worth 15% of the grade. Each of the two blog posts will be worth 5%. Commenting on other people's blog posts, and responding to comments on your own blog posts, will be worth the final 5%.

Some general tips

1. There is no length requirement or limit for the posts; quality is more important than quantity, but obviously the posts need to be long enough to be interesting and to stand alone.
2. The topic should be focused and narrow, so that you can delve into specifics in each post. Avoid superficial treatment of a broad topic.
3. Each post should contain appropriate visual content (e.g. images, video, and graphics) to enhance the blog post. Use visuals to complement the text, illustrate the important points of your post, keep the reader's attention, and break up the text. Give each image a descriptive Credit all images appropriately (e.g. by acknowledging the source of the image in small-font beneath it).
4. Each post should be extensively supported by reference to research. Cite all of your sources by embedding a hyperlink to an external website with the original source of information.
5. The posts should be written for a lay audience, without technical jargon.
6. The introduction should draw people's attention.
7. Paragraphs should generally be short.
8. End each post with a summary statement, based upon the evidence you've provided.
9. Carefully proof-read each blogpost: a) to eliminate any typos, and b) to ensure that you can stand by every claim made in your post; your post will be read, and critiqued, by your classroom peers, the TA, and the instructor.

Deadlines

In order to ensure a steady stream of new content, and to enable students to respond to each other's blog posts, please adhere to the following deadlines:

- Publish at least one blog post online by **noon on Friday September 23rd**, and the second by **noon on Friday October 28th**.

- Comment on at least two blog posts by **noon on Friday September 30th**, and on at least two others by **noon on Friday Nov 4th**.
- Respond to all comments on your own blogposts by **noon on Friday October 7th**, and again by **noon on Friday November 11th**.

Posting blogs

1. Create a WordPress account, if you don't already have one. Use your CU email address, and ***ensure that your public display name is your full name*** (so that we know who posted which blogpost).
2. We will invite you to join the CUBoulderSustainableFood blog.
3. You will be able to create and post content, by following the prompts to create a new post.
4. Set up alerts, or regularly monitor your blogposts, so that you are aware when someone comments on your posts.

CORNERSTONE PROJECT

Introduction

Most careers in the environmental and development sectors will necessitate fundraising through grant-writing – becoming competent at doing so is an invaluable skill. Further, developing more sustainable food systems requires the perspectives and skills of multiple people. A group project is a great way to learn to work collaboratively towards a common goal.

Assignment

Your final project is to **work in groups of four or five to create a project proposal that addresses an issue around food on the CU Boulder campus**, responding to the Request for Proposals for the Small Grants Program of the *Environmental Improvement Initiative* of *Sustainable CU* (operated by the Environment Center). See full details of the initiative at: http://ecenter-old.colorado.edu/greening-cu/sustainable-cu.

You will **1) prepare a final written project proposal**, which should be informed by the material we have covered in class, and by primary research; and **2) pitch the project proposal** to the course instructor, TA, and your class peers in the final week of class.

There will be several interim deadlines throughout the semester to help you stay on track for the final project. You will be graded for completing the interim assignments, and will receive feedback that you should integrate into the final project proposal.

Interim assignments

- **By noon on Wednesday September 28th** – Submit a list of group members, a provisional title, and a brief workplan (1 page). The latter document should explain a) the topic or issue that your group will address, and 2) how you intend to complete the assignment.
- **By noon on Wednesday October 19th** – Submit a draft 'Background and significance' section (see below)
- **Before Friday December 2nd** – Meet with the course TA for a proposal workshop session (a 30-minute meeting to discuss your proposal). Arrange this with the TA directly.

Deadlines

- **By noon on Monday December 5th** – Submit your final project proposal
- **In class, on Tuesday December 6th or Thursday December 8th** – Present your project proposal to the course instructor, TA, and the rest of the class

Final project grading

- Completion of interim assignments [15%] – 5% for satisfactory completion of each
- Final written project proposal [60%]
- Project pitch [25%]

Examples

Past funded projects can be found here: http://ecenter-old.colorado.edu/greening-cu/sustainable-cu. Feel free to browse these for inspiration, but of course all content of your proposal must be original work.

Sustainable CU Small Grants

REQUEST FOR PROPOSALS

You should **write and submit your proposal according to the guidelines below**, which are adapted from the Sustainable CU small grant application form here: http://ecenter-old.colorado.edu/greening-cu/garden/37-greening-cu/617-small-grant-application. Submit your proposal as a Word document, to DropBox on D2L. Do NOT submit your proposal using this online system.

Sustainable CU is a grant fund approved by students in 2004 to fund and promote innovative, student-led sustainability projects on the University of Colorado-Boulder campus. Sustainable CU offers support for small projects (hereafter small grants) up to $2500.

Small grants fund expenses such as infrastructure, contractor fees, consumables, and equipment rentals. Sustainable CU does not pay for applicants' own labor. However, fees charged by third-party professionals, e.g., architects and electricians, are funded by the program. Approximately $150,000 is available for disbursement.

PROPOSAL ELEMENTS AND GUIDELINES

I. Proposal title

State the title of your proposal: it should be short and informative. You will be awarded a bonus point if it includes a good pun.

II. Applicant Information

Please provide the names and email addresses of all applicants.

III. **Introduction** (max. 500 words)

Describe the project, including all elements and deliverables.

III. **Background and significance** (max. 1000 words)

First, explain the wider (e.g. national, global) theoretical and applied context of the proposed project, using evidence from the existing literature to support your case. Second, explain the specific need for the proposed project on the CU campus, using evidence from primary research (e.g. online data; or interviews with students and/or campus faculty, staff, or organizations) to support your case.

IV. **Timeline** (in table format – max. one page)

Provide a specific timeline listing all major project steps and deliverables. This criterion helps to establish project feasibility, an important criterion in grant approval. All elements must be realistically scheduled for completion within three months of grant approval, the deadline provided above.

V. Student Involvement (max. 250 words)

How were students involved in the genesis and development of the project? How will students continue to be involved throughout the project?

VI. Faculty, staff, and expert involvement (max. 500 words)

Which faculty, staff, experts, or organizations (CU or external) have you consulted about this project – including for its need and viability? Report any relevant communications, meetings, or interviews with in relation to this proposal. How have these interactions modified your planning for this proposal?

VII. Student Impact (max. 250 words)

How many students, or what percentage of the student body, will be affected by the project? Please provide numerical estimates and grounds for such estimates when possible. If concrete estimates are unavailable, explain why.

VIII. **Innovation** (max. 500 words)

Explain why your project is a new idea and/or how it addresses a food sustainability related issue in a novel manner. Innovative projects are preferred over minor extensions of previous work, but projects must also be feasible. Address the feasibility of your proposal here if it is non-obvious. The timeline provided above also informs our judgment of project feasibility.

IX. Environmental Sustainability (max. 250 words)

Sustainability has environmental, economic, and social justice aspects. Here, describe the environmentally beneficial, or "green," outcomes of your project in detail.

X. Economic Sustainability (max. 250 words)

Here, describe the financial benefits that result from your proposal in detail. If applicable, include longer-term benefits, e.g., utilities cost savings over five years. Justify numerical estimates.

XI. Social Equity Sustainability (max. 250 words)

Here, describe how the proposed project benefits disadvantaged or minority campus constituencies.

XII. Detailed budget (no limit)

Provide a link below to a Google Documents spreadsheet (with open access) showing exactly how requested funds will be spent. A template is located at https://docs.google.com/spreadsheets/d/1qaLkcCF7IO8ItXD5IRdcop3F-61mcKLT6kOT_tzq7bI/edit#gid=0. Include the items requested, prices, quantities, and sources for quotes as well as a final figure for funds requested from Sustainable CU. The best grants strike a balance between frugality and implementation of current technology or theory.

XIII. Matching Funds (max. 150 words)

List possible sources of funding from other sources, if any. List amounts potentially available from those sources.

XIV. Bibliography (no limit)

List any references cited in your proposal, in APA format.

XV. **Appendices** (max. two pages)

Provide any additional information necessary for the funders to better understand your project (e.g. prototype educational materials, site descriptions, supporting figures).

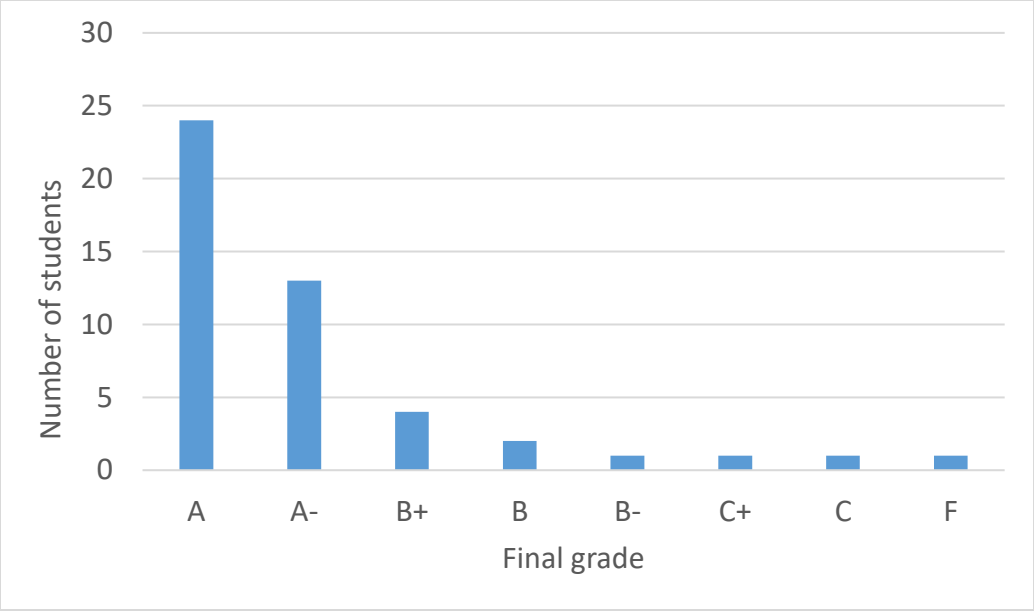

Figure 1. Final grade distribution for the Fall 2015 iteration of the ENVS 3525 *Sustainable Food Systems* course

Engaged Learning Pre-Course Survey

Q1 Thank you for your participation! Thank you for participating in this small research project that aims to understand how your participation in ENVS -001 or -002 may enhance your learning relative to other courses at CU Boulder. The survey will take less than 10 minutes to complete. Your contributions to the study will be kept anonymous. A similar follow-up survey will be conducted in January 2016 – if you complete this initial survey, you will also be invited to participate in the follow-up survey.It is entirely your choice whether or not to participate in this survey. You have the right to skip most questions in the survey, if you choose. There are only a few questions that are required as part of this survey, and they are indicated clearly. If you choose not to answer these questions, you can stop the survey at any time.

If you complete the survey, you can elect to be entered into a prize draw to win a gift voucher for $40. The same opportunity will be available for the follow-up survey. Your participation is greatly appreciated and will help us develop a better understanding of effective teaching methods. The results of the study will be published and disseminated, and you will have an opportunity to read them.If you have questions regarding your rights as a participant, any concerns regarding this project or any dissatisfaction with any aspect of this study, you may report them - - confidentially, if you wish - - to the Institutional Review Board, 3100 Marine Street, Rm A15, 563 UCB, (303) 735-3702.

Q2 Do you agree to participate in this survey (Required)?

- ❍ Yes (1)
- ❍ No (2)

Q3 Please indicate which course you are enrolled in for the fall 2015 semester.

- ❍ ENVS 3525-001 Natural Resource Management in Colorado and the West (1)
- ❍ ENVS 3525-002 Sustainable Food Systems (2)

Q4 "With respect to the average of my experiences across all ENVS classes that I have taken to date…

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
I can usually find ways of applying what I'm learning in class to something else in my life (1)	❍	❍	❍	❍	❍
I feel energized by the ideas that I am learning in most of my classes (2)	❍	❍	❍	❍	❍
I feel as though I am learning things in my classes that are worthwhile to me as a person (3)	❍	❍	❍	❍	❍
I am learning a lot in my classes (4)	❍	❍	❍	❍	❍
I find myself thinking about what I'm learning	❍	❍	❍	❍	❍

in class even when I'm not in class (5)					
I often discuss with my friends what I'm learning in class (6)	❍	❍	❍	❍	❍
I usually think about how the topics being discussed in class might be connected to things I have learned in previous class periods (7)	❍	❍	❍	❍	❍
When I am learning about a new idea in a class, I think about how I might apply it in practical ways (8)	❍	❍	❍	❍	❍
Sometimes I get so interested in something I'm studying in class that I spend extra	❍	❍	❍	❍	❍

time trying to learn more about it (9)					
I regularly participate in class discussions in most of my classes (10)	❍	❍	❍	❍	❍
I ask my professors questions during class if I do not understand (11)	❍	❍	❍	❍	❍
Sometimes I am afraid to participate in class (12)	❍	❍	❍	❍	❍
Often I find my mind wandering during class (13)	❍	❍	❍	❍	❍
I've been bored in class a lot of the time (14)	❍	❍	❍	❍	❍
It's hard to pay attention in many of my classes (15)	❍	❍	❍	❍	❍

Q5 Before this course began, how interested in the topic of Sustainable Food Systems (ENVS 3525-002 respondents) or Natural Resource Management in Colorado and the West (ENVS 3525-001 respondents) were you?

- ❍ Not at all interested (1)
- ❍ Slightly interested (2)
- ❍ Moderately interested (3)
- ❍ Very interested (4)
- ❍ Extremely interested (5)

Q6 Before this course began, were you engaged with organizations or activities related to Sustainable Food Systems (ENVS 3525-002 respondents) or Natural Resource Management in Colorado and the West (ENVS 3525-001 respondents)?

- ❍ Not at all engaged (1)
- ❍ Slightly engaged (2)
- ❍ Moderately engaged (3)
- ❍ Very engaged (4)
- ❍ Extremely engaged (5)

Q7 What is your age?

Q8 What gender do you identify with?

- ❍ Male (1)
- ❍ Female (2)
- ❍ Other (3)

Q9 What state is your primary residence?

Q10 What is your current year in school?

- ❍ Freshman (1)
- ❍ Sophomore (2)
- ❍ Junior (3)
- ❍ Senior (4)
- ❍ Other (5) _____

Q11 What is your current GPA?

Q12 How many credits to date have you taken at CU Boulder?

Q13 What race do you identify with?

- ❍ American Indian or Alaskan native (1)
- ❍ Black or African American (2)
- ❍ Asian (3)
- ❍ Native Hawaiian and other Pacific Islander (4)
- ❍ White (5)
- ❍ Other (6)
- ❍ Two or more races (7)

Q14 What do you plan to major in?

Q15 Do you think it's likely that you will apply to graduate school within three years of completing your degree?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Undecided (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q16 Do you live on or off campus?

- ❍ On campus (1)
- ❍ Off campus (2)

Q17 Do you wish to be entered into a drawing for a $40 gift certificate? If so, please include your name and email. This information will only be used to create the pool for the prize draw, and will not be associated with your responses to the other questions.

Engaged Learning Post-Course Survey

Q1 Thank you for your participation! Thank you for participating in this small research project that aims to understand how your participation in ENVS 3525 (-001 or -002) may have enhanced your learning relative to other courses at CU Boulder. Your participation is greatly appreciated and will help us develop a better understanding of effective teaching methods. The results of the study will be published and disseminated, and you will have an opportunity to read them.The survey will take less than 15 minutes to complete. Your contributions to the study will be kept anonymous. It is entirely your choice whether or not to participate in this survey. You have the right to skip most questions in the survey, if you choose. There are only a few questions that are required as part of this survey, and they are indicated clearly. If you choose not to answer these questions, you can stop the survey at any time.

If you complete the survey, you can elect to be entered into a prize draw to win a gift voucher for $40. If you have questions regarding your rights as a participant, any concerns regarding this project or any dissatisfaction with any aspect of this study, you may report them - - confidentially, if you wish - - to the Institutional Review Board, 3100 Marine Street, Rm A15, 563 UCB, (303) 735-3702.

Q2 Do you agree to participate in this survey (required)?

- ❍ Yes (1)
- ❍ No (2)

Q3 Please indicate which course you were enrolled in.

- ❍ ENVS 3525-001 Natural Resource Management in Colorado and the West (1)
- ❍ ENVS 3525-002 Sustainable Food Systems (2)

Q4 “With respect to my experiences in the ENVS 3525 (-001 or -002) class that I took at CU Boulder in Fall 2015…

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
I could usually find ways of applying what I was learning in class to something else in my life (1)	❍	❍	❍	❍	❍
I felt energized by the ideas that I learnt in the course (2)	❍	❍	❍	❍	❍
I felt as though I learnt things in my class that were worthwhile to me as a person (3)	❍	❍	❍	❍	❍
I learnt a lot in this class (4)	❍	❍	❍	❍	❍
I found myself thinking about what I was learning	❍	❍	❍	❍	❍

in class even when I wasn't in class (5)					
I often discussed with my friends what I was learning in class (6)	❍	❍	❍	❍	❍
I usually thought about how the topics being discussed in class might be connected to things I had learned in previous class periods (7)	❍	❍	❍	❍	❍
When I was learning about a new idea in the class, I thought about how I might apply it in practical ways (8)	❍	❍	❍	❍	❍
Sometimes I got so interested in something I was studying in class that I spent extra	❍	❍	❍	❍	❍

time trying to learn more about it (9)					
I regularly participated in class discussions in this class (10)	❍	❍	❍	❍	❍
I asked my professor questions during class if I did not understand (11)	❍	❍	❍	❍	❍
Sometimes I was afraid to participate in class (12)	❍	❍	❍	❍	❍
Often I found my mind wandering during class (13)	❍	❍	❍	❍	❍
I was bored in class a lot of the time (14)	❍	❍	❍	❍	❍
It was hard to pay attention in this class" (15)	❍	❍	❍	❍	❍

Q5 Currently, how interested in the topic of Natural Resource Management in Colorado and the West (ENVS 3525-001 respondents) or Sustainable Food Systems (ENVS 3525-002 respondents) are you?

- ❍ Not at all interested (1)
- ❍ Slightly interested (2)
- ❍ Moderately interested (3)
- ❍ Very interested (4)
- ❍ Extremely interested (5)

Q6 Currently, are you engaged with organizations or activities related to Natural Resource Management in Colorado and the West (ENVS 3525-001 respondents) or Sustainable Food Systems (ENVS 3525-002 respondents)?

- ❍ Not at all engaged (1)
- ❍ Slightly engaged (2)
- ❍ Moderately engaged (3)
- ❍ Very engaged (4)
- ❍ Extremely engaged (5)

Q17 Do you wish to be entered into a drawing for a $40 gift certificate? If so, please include your name and email. This information will only be used to create a pool for the prize drawing and will not be associated with your responses to the other questions.

Q7 For EACH of the following five questions, choose only ONE of the options listed, and then explain your choice.1a. Which of the following aspects of the ENVS 3525-002 Sustainable Food Systems course…

	...most enhanced your interest in the topic of Sustainable Food Systems? (1)	...least enhanced your interest in the topic of Sustainable Food Systems? (2)
Volunteering assignment (1)	❍	❍
Ethical eating assignment (2)	❍	❍
Blog assignment (3)	❍	❍
Group project (4)	❍	❍
Visiting speakers (5)	❍	❍
Classes led by Professor Newton (no visiting speaker) (6)	❍	❍
None of the above (7)	❍	❍

Q8 1b. Please explain your answer to the above question.

Q9 2a. Which of the following aspects of the ENVS 3525-002 Sustainable Food Systems course…

	...most changed your attitude or beliefs about Sustainable Food Systems? (1)	...least changed your attitude or beliefs about Sustainable Food Systems? (2)
Volunteering assignment (1)	❍	❍
Ethical eating assignment (2)	❍	❍
Blog assignment (3)	❍	❍
Group project (4)	❍	❍
Visiting speakers (5)	❍	❍
Classes led by Professor Newton (no visiting speaker) (6)	❍	❍
None of the above (7)	❍	❍

Q10 2b. Please explain your answer to the above question.

Q11 3a. Which of the following aspects of the ENVS 3525-002 Sustainable Food Systems course…

	...most changed your behavior in relation to Sustainable Food Systems? (1)	...least changed your behavior in relation to Sustainable Food Systems? (2)
Volunteering assignment (1)	❍	❍
Ethical eating assignment (2)	❍	❍
Blog assignment (3)	❍	❍
Group project (4)	❍	❍
Visiting speakers (5)	❍	❍
Classes led by Professor Newton (no visiting speaker) (6)	❍	❍
None of the above (7)	❍	❍

Q12 3b. Please explain your answer to the above question.

Q13 4a. Which of the following aspects of the ENVS 3525-002 Sustainable Food Systems course…

	...may most influence your choice of classes in the future? (1)	...may least influence your choice of classes in the future? (2)
Volunteering assignment (1)	❍	❍
Ethical eating assignment (2)	❍	❍
Blog assignment (3)	❍	❍
Group project (4)	❍	❍
Visiting speakers (5)	❍	❍
Classes led by Professor Newton (no visiting speaker) (6)	❍	❍
None of the above (7)	❍	❍

Q14 4b. Please explain your answer to the above question.

Q15 5a. Which of the following aspects of the ENVS 3525-002 Sustainable Food Systems course…

	...may most influence your choice of career path (including graduate school) in the future? (1)	...may least influence your choice of career path (including graduate school) in the future? (2)
Volunteering (1)	❍	❍
Ethical eating assignment (2)	❍	❍
Writing a blog (3)	❍	❍
Final group project (4)	❍	❍
Visiting speakers (5)	❍	❍
Classes led by Professor Newton (no guest speaker) (6)	❍	❍
None of the above (7)	❍	❍

Q16 5b. Please explain your answer to the above question.