



****PLEASE NOTE: THIS IS A DRAFT SCHEDULE.**

Lead Instructor:

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Office hours: Tues/Thurs 11-12midday, or by appointment
Office: B207 Clark building

Weekly seminar class: Wednesday 12 midday-2:50pm, Wagar 232

Course Description:

This course offers a broad introduction to trends and new transdisciplinary methods in the study of global environmental sustainability. Our aim is not to cover the full spectrum of critical themes associated with the evolving discipline of sustainability studies. Instead, we will be focusing on a few major issues, and introducing you to some significant established and emerging scientists at CSU whose work is having an impact on the way we think about sustainability and the ways in which graduate students will be crafting their careers.

Participants will learn about principles of and threats to environmental sustainability, and will investigate and develop case studies of selected situations in which sustainability is at risk.

In the course of our seminar class, we will read key articles on sustainability, ecosystem services, urban ecology, sustainable food supplies and food security, water and energy use, remote sensing of hydrological and biogeochemical variation, problems in management of carbon and nitrogen balances in agriculture, and management of protected areas, forest zones and other exploited systems. By the end of the semester we anticipate that you will have enhanced your understanding of sustainability and complexity, and will have a broad familiarity with current issues in global environmental sustainability. You will also have completed a comprehensive

case study involving sustainability of a biophysical or socio-ecological system. While this is a broad-ranging course that alludes to sustainability issues around the world, we will also have a special interest in the dilemmas facing city managers, ranchers, and gas and oil producers in greater Colorado.

Course Objectives:

- To introduce students to concepts that provide a foundation for understanding present and future environmental sustainability issues;
- To ensure that students understand sustainability is as much a political and sociological issue as a scientific one;
- To provide an opportunity for students to learn about threats to environmental sustainability that are critical today: changes in land use, increasing consumption, climate change and migration, loss of biodiversity, and problems with natural resource management, food production systems, environmental justice, and others;
- To help students learn to think critically about information they receive regarding environmental and social issues;
- To investigate sustainability issues in a variety of biophysical and socioecological systems;
- To develop students' communication skills by using written and oral presentations as means of synthesizing knowledge.

Evaluation of students:

Forum Responses	20%
Class facilitation	20%
Case study report	40%
Feedback on one case study	10%
Participation	10%

Class Facilitation and Forum Responses¹

Forum Responses (20%). Throughout the semester, you will write 4 short responses (500-1000 words each) that are intended to give you space to explore ideas, questions, and debates related to the assigned text(s). While your response should focus on the selected readings for that day, you can certainly incorporate references to other texts from the unit and outside works that help you elaborate your discussion. Your responses should be thoughtful and well-written, and they should demonstrate your own engagement with the material

Class Facilitation (20%). For most of the seminars, a visiting faculty member will assign a recent, influential paper that has influenced their thinking, and a second paper that they have co-authored and which represents their current research. At the start of the class, visiting faculty members will introduce themselves and provide a brief, very informal account of their career engagement with the field of sustainability science. This will be followed by a formal student-facilitator presentation on the assigned, field-defining paper that the visitor has chosen. This class facilitation will involve a 10-minute presentation on the selected reading for that day and an

¹ Wording in this section is indebted to the rubric for an assignment developed by Lynn Badia and David Bunn for ENG 630.

accompanying written (pre-circulated) critical précis of 1200-1500 words. Your presentation and précis should aim to: 1. Provide a critical summary of the selected text – in other words, clearly explain the main argument(s) of the text and the significance of the argument. You may also choose to discuss the essay’s methodology and evidence as well. 2. Provide some interpretive response of your own. You may reference the other texts assigned for the day and unit if they help illuminate your discussion.

Case Study Assignment (40%)

Sustainability science is frequently confronted with “wicked” problems that require complex answers derived from multiple disciplines and a variety of institutions. For that reason, it has become increasingly common for graduate sustainability studies to include *real-world case study exercises* that bridge the divide between theory and practice.

For one of your major ESS 501 assignments, you will be asked to work with two other team members on a local problem of sustainability, or sustainable management of environmental resources. Your end product will be a *case study report* of between 3000—5000 words, with supporting documentation (not included in the word count). Our model for the report will be the submissions guidelines for the new journal *Case Studies in the Environment* from the University of California, available here: <https://cse.ucpress.edu/content/submit>. (See the Assignments page of Canvas for further details.)

Class schedule (subject to change)



Week 1

Wednesday August 26 – *Introductory Discussion: What (and Where) is Sustainability Under Contemporary Capitalism?--David Bunn*

Reading: Clark & Foster (2009), “Ecological Imperialism and the Global Metabolic Rift”; Eleanor Ostrom (2009), “Sustainability of Social-Ecological Systems”; Stoknes & Rockstrom (2018), “Redefining Green Growth”; Steffen et al (2015) “Planetary Boundaries”; Naomi Klein, “Capitalism Killed Our Climate Momentum” <https://theintercept.com/2018/08/03/climate-change-new-york-times-magazine/>; Steven Pinker, “Enlightenment Environmentalism” <https://thebreakthrough.org/journal/no.-8-winter-2018/enlightenment-environmentalism>;

Optional Background Reading: IPCC Special Report (2019) *Climate Change and Land (Summary for Policymakers)*;



Week 2

Wednesday September 2 *The Ecology of Sustainable Cities*--**Melissa McHale**

Reading: Pickett et al (2013), "Ecological Science and Transformation to the Sustainable City"; McHale et al (2017), "Democratization of Ecosystem Services"

Week 3

Wednesday September 9—*Water and Urbanizing Landscapes*--**Melinda Laituri**

Reading: Laituri (2020) "The Hydrosocial Cycle in Rapidly Urbanizing Watersheds"; Patricia Gober, "Desert Urbanization and the Challenges of Water Sustainability"

Week 4

Wednesday September 16 – *Urban Sustainability Futures: Fort Collins as a World-Class Demonstration Model* – **Jensen Morgan** (Climate Action & Community Engagement, Environmental Services Department, City of Fort Collins)

Week 5

Wednesday September 23— *SPECIAL SESSION: Justice, Indigenous Knowledge, and Native Lands*—**Valerie Small (Apsáalooke)**, *Trees Water People*, **Hannah Earl Ute** *Mountain Ute Tribal Lands*



Week 6

Wednesday September 30—*Fluxes, Flows, and Hydrologic Complexity* —**Stephanie Kampf**

Reading: Kampf et al (2020), “The Case for an Open Water Balance”; Berghuis et al (2014), “A Precipitation Shift From Snow Towards Rain Leads to a Decrease in Streamflow”

Week 7

Week 7

Wednesday October 7—*Designer Ecosystems*--Matt Ross

Reading: Ellis (2019), “Sharing the Land”; Ross et al (2015), “Designer Ecosystems”

Week 8

Wednesday October 14—*Agriculture, Economic Development and Nitrogen Pollution*--Rich Conant

Reading: Zhang & Wang (2016), “Modular Co-Culture Engineering”; Conant et al 2019, “Rethinking Sources of Nitrogen to Crops”;



Week 9

Wednesday October 21—*SPECIAL SESSION: Landscapes of human-carnivore co-existence*—Kevin Crooks.

Reading: Carter and Linnell (2012) "Co-adaptation is Key to Co-existing with Large Carnivores"; Niemiec et al (2020), "Public Perspectives and Media Reporting of Wolf Reintroduction in Colorado"

Week 10

Wednesday October 28—*Impact of Payment for Services on Sustainability in Coupled Natural-Human Systems*—Kelly Jones

Reading: Chan et al (2017), “Payment for Ecosystem Services”; Borner et al (2017), “The Effectiveness of Payments for Environmental Services”; Asbjornsen, Jones et al (2017), “Assessing Impact of Payments for Watershed Services.”



Week 11

Wednesday November 4-- *Food Justice and the Politics of Green Gentrification--*
Joshua Sbicca

Reading: Cadieux & Slocum (2015), “What does it mean to do food justice?”; Aikon, Kato & Sbicca (in press), “Development, Displacement, and Dining”; Sbicca (2019), “Urban Agriculture Revalorization and Green Gentrification in Denver, Colorado.”

Week 12

Wednesday November 11—*Sustainable Adaptive Management of Complex Systems (the Elephant Dilemma)--***David Bunn**

Reading: Ripple et al (2015), “Collapse of the World’s Largest Herbivores”; Biggs et al (2015), “Strategies for Managing Complex Social Ecological Systems”; Bunn et al (in press), “Golden Wildebeest Days: The Wildlife Economy in South Africa.”

**Week 13**

Wednesday November 18—*The Argument for Renewables--* **Madeline Gottlieb**

THANKSGIVING BREAK

Week 14:

Wednesday December 2 — *Just Transitions? Green Development, and Equitable Low-Carbon Economies--***Dimitris Stevis**

Reading: Hopwood et al (2005), “Sustainable Development: Mapping Different Approaches”; Stevis & Felli (2016), “Green Transitions, Just Transitions”; Just Transition Research Collaborative (2018), “Mapping Just Transition(s) to a Low Carbon World.”

Week 15

Wednesday December 9–Wrap Up. Draft Case Studies Presentations

IN GENERAL

- Grading scale: This course will adhere to the following CSU standardized grading scale: A+ = 4.0; A = 4.0; A- = 3.667; B+ = 3.334; B = 3.00; B- = 2.667; C+ = 2.334; C = 2.00; D = 1.00; F = 0.00
- Submitting your work: All of your work should be submitted electronically on Canvas, two hours prior to the beginning of class, at **11:00am, on the day it is due**. *The link for submitting your work will become unavailable after 2:00pm*, so allow enough time to upload your paper and deal with any internet problems. If you miss the assignment drop, you will need to email your paper directly to us.
- Late work: Only if there are exceptional circumstances discussed with me well in advance of the deadline or a documented medical emergency, it may be possible to arrange an extension for submitting late work.

CONTACT HOURS

CSU's expectations for homework or other work outside of instructional time is equivalent to 2 hours of outside work for each contact hour. Since our class meets for almost 3 hours per week, you should plan for about 6 hours of homework per week.

ATTENDANCE AND PARTICIPATION

Since this class meets only once a week, attendance is especially important. In order to meet the challenges of the materials and grapple with the unfamiliar and sometimes unexpected perspectives they offer, your attendance is necessary to be fully engaged in the course. Come to class on time, having completed the readings and assignments for the day and be prepared to ask questions and contribute.

COMMUNICATION

- Office Hours: I encourage and welcome you to meet with me to discuss the course and your work! If you have a schedule conflict during office hours, I would be happy to make an appointment with you at another time.
- Email: Students are expected to check their email regularly for class updates. I do my best to respond to your emails promptly. However, I usually stop checking email at 5:00 p.m. In general, please allow 48 hours for a response.
- Instructor Absence: If we should need to unexpectedly cancel class due to unforeseen circumstances (such as inclement weather), I will notify everyone in class via email as quickly as possible.

ACADEMIC INTEGRITY

Academic integrity is a cornerstone of academic research and intellectual work, and we take it very seriously. This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog and the Student Conduct Code. As explained in the CSU General Catalog, violations of academic integrity include, but are not limited to: plagiarism, cheating, unauthorized possession or disposition of academic materials (which includes the selling or purchasing of any academic work), falsification, and facilitation of any act of academic misconduct committed by another student. For a full definition of these violations, see the General Catalog: <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/#academic-integrity>

It is your responsibility to know CSU's policies regarding academic integrity. They will be enforced in this course without exception. If you have questions about plagiarism or properly working with sources, you can talk with us, schedule a visit at the CSU Writing Center, speak with a librarian, and/or consult one of the online resources below.

Online guides about academic integrity and working with sources:

- CSU Learning Center guides on academic integrity:
<https://learning.colostate.edu/integrity/index.cfm>
- CSU Writing Studio guides on working with sources:
<https://writing.colostate.edu/guides/index.cfm?categoryid=8&title=2>
- If you feel stuck and need any assistance finding the right sources for your paper, you can contact one of the wonderfully helpful librarians at CSU:
<https://lib.colostate.edu/services/ask-us/>

CSU WRITING CENTER

Are you having trouble getting started on research writing? Would you like feedback on a final draft before you turn it in? Are you working to improve English fluency in your writing? The Writing Center is a free service for members of the CSU community who want to improve their writing by getting feedback targeted to their needs and concerns. The Writing Center services *are not remedial* — freshmen, graduate students, and professors visit the Writing Center. Writing tutors can assist at every stage of the writing process (research, brainstorming, drafting, polishing), and they deal with a range of elements that contribute to strong writing (organization, word choice, grammar, clarity, etc.). You can schedule an appointment to meet face-to-face with a tutor or submit your work electronically for an online consultation.

Website: <http://writingcenter.colostate.edu>

Phone: (970) 491-0222 • Email: writing@colostate.edu

SPECIAL CIRCUMSTANCES

We welcome working with students who need accommodations due to a disability. So that we can arrange appropriate academic adjustments, you will need to contact the Office of Resources for Disabled Students during the first two weeks of the semester. This office will provide me with the required documentation and guide us in developing suitable accommodations for this course.

Website: <http://rds.colostate.edu/>
Phone: 970- 491-6385 (V/TDD)

SAFETY, REPORTING, AND RESOURCES

CSU's Discrimination, Harassment, Sexual Harassment, Sexual Misconduct, Domestic Violence, Dating Violence, Stalking, and Retaliation policy designates faculty and employees of the University as "Responsible Employees." This designation is consistent with federal law and guidance, and it *requires faculty to report information regarding students who may have experienced any form of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation*. This includes information shared with faculty in person, electronic communications or in class assignments. As "Responsible Employees," faculty may refer students to campus resources (see below), together with informing the Office of Support and Safety Assessment to help ensure student safety and welfare. Information regarding sexual harassment, sexual misconduct, relationship violence, stalking and retaliation is treated with the greatest degree of confidentiality possible while also ensuring student and campus safety.

Any student who may be the victim of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation is encouraged to report to CSU through one or more of the following resources:

- Emergency Response: 911
- Colorado State University Police Department (non-emergency): (970) 491-6425
- Deputy Title IX Coordinator / Office of Support and Safety Assessment: (970) 491-1350

For counseling, support, and assistance, please see:

- The CSU Health Network, which includes a variety of counseling services that can be accessed at: <http://www.health.colostate.edu/>
- The Sexual Assault Victim Assistance Team is a confidential student resource that does not have a reporting requirement and that can be of great help to students who have experienced sexual assault. The web address is <http://www.wgac.colostate.edu/need-help-support>
- Call the "Tell Someone" Line to discuss concerns about any member of the CSU community. Call (970) 491-1350, or for more info and online referral go to: <http://supportandsafety.colostate.edu/tellsomeone>