Course Syllabus: ESS 542, *Greenhouse Gas Policies*

Instructors

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Office Hour: Wednesday 1-2PM or by appointment

Course Description

This course examines the evolution of rules, regulations and standards for greenhouse gas policies. Students will explore the fundamental characteristics of current and past procedures in order to understand the key components of comprehensive, reliable greenhouse gas accounting through readings, opportunities to engage discussion with experts in the field, and facilitated discussions.

Leaning Objectives

The goal of this course is to provide students with a fundamental understanding of standards for greenhouse gas accounting among different organizations and institutions. After completing this course, a successful student will be able to:

- Understand key concepts and definitions related to GHG accounting, such as baselines, additionality, leakage, reversals, net-net accounting, gross-net accounting, and permanence.
- Understand issues related to policies, such as carbon tax and markets, regulatory v. voluntary emission reductions, cap and trade, offsets, verification, consumption v. production based accounting, levels of assurance and risks, governance, and co-benefits.
- Be able to characterize some of the key emission control policies and implications for accounting, including national, regional, and international agreements dictating accounting protocols.

Teaching Philosophy

Our goal is to help you learn about greenhouse gas policies. We will facilitate your learning experience through:

- A select number of lectures and engagement with guest speakers to provide context on key concepts and policy programs;
- Readings to provide additional context on greenhouse gas policies and their associated accounting of greenhouse gas emission reductions; and
- Facilitate discussions surrounding the topics during class meetings.

Ultimately the responsibility for learning requires your active participation in the course! Your responsibilities include:

- Preparation: Reading the assigned materials before each class.
- Participation: Attend classes regularly and participate in group discussions with instructors, classmates and guest speakers.
- Lead Discussion: Facilitate class discussion on a topic with a small team of students.

Student Evaluation

Grades will be assigned as Satisfactory/Unsatisfactory for this course. Students will be evaluated for a satisfactory grade based on the following criteria:

- Class Participation (25%). Participate in class discussions with insightful comments and professional courtesy for opposing viewpoints. Students will also prepare 1-2 questions for invited speakers based on readings and prior class discussions.
- Discussion Lead (75%). Students will work in small teams of 3 people to provide about a 20 minute overview of a topic(s). Each student will be assigned two topics over the course of the semester. Initial readings will be provided by the instructors, but student teams will gather 3-5 additional references to inform their presentation. In addition to the presentation, student teams will prepare questions and facilitate discussion for the remainder of the class meeting. Presentations may be subdivided into segments with discussion between segments if desirable.

Absences can be excused due to illness or university obligation with notification from the university (e.g., travel for official university athletic event) or the instructor approves the absence prior to the class. However, you must be present on the days assigned to your team for facilitating the class discussion in order to receive a satisfactory grade for the course.

Tentative Schedule and Content

Date	Topic	Readings
1/22	Introduction - Instructors	No reading this week
1/29	Kyoto Protocol - Instructors	Hepburn 2007, Wara 2007, and Helm 2012 Executive summaries - IPCC WGIII 2014 Chapters 13, 14 and 15
2/5	Mechanisms for Reducing GHG Emissions: Carbon Tax, Carbon Markets, Subsidy Programs – Student Team	Aldy and Stavins 2012
2/12	Production v. Consumption Based Accounting – Student Team	Davis et al. 2011, Barrett et al. 2013
2/19	Baselines and Additionality – Student Team	Gustavsson et al. 2000
2/26	Post-Kyoto Land Based Accounting – Student Team	Schlamadinger et al. 2007, Canadell et al. 2007, Bottcher et al. 2008
3/5	Voluntary Carbon Markets and Registries – Student Team	Merger and Pistorius 2011, Corbera et al. 2009, Bernstein et al. 2010
3/12	Bioenergy - Student Team	Kim et al. 2009, Searchinger 2008 and 2009, EPA Framework for Assessing Bioenergy Emissions
3/19	Spring Break	n/a
3/26	Montreal Protocol effects on GHG Emissions – Guest Lecturer	Speaker: A.R. "Ravi " Ravishankara, Professor, Departments of Chemistry and Atmospheric Sciences Reading: TBD
4/2	Reducing Emissions from Deforestation and Forest Degradation (REDD) – Student Team	Corbera et al. 2010
4/9	Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+) – Student Team	Chhatre and Agrawal 2009, Stickler et al. 2009, Hamaker at al. 2012

4/16	Energy Efficiency in EPA Pollution Standards Program – Student Team	TBD
4/23	State Programs – Guest Lecturer	Speaker: Bill Ritter, Director, Center for the New Energy Economy Reading: No reading this week
4/30	C Pollution Standards for Power Plants – Guest Lecturer	Speaker: Cate Hight, US-EPA Readings: US-EPA Existing and New Stationary Emissions Guidelines
5/7	California GHG Emissions Mitigation Program – Guest Lecturer	Speaker: Rajinder Sahota, Cap-and-Trade Branch Chief, CA Air Resources Board Reading: Shobe et al. 2014
Finals Week	No final for this course	

Required Materials

This class focuses on reading materials from the peer-review literature, which will be provided by the instructor on Canvas or available through the library.

Library & Research Help

The CSU Libraries Help Desk provides research and technical assistance either in person at Morgan Library or by phone at 970-491-1841. Jocelyn Boice is the librarian supporting this course. Contact her by email at jocelyn.boice@colostate.edu or by phone at 970-491-3882 to ask questions or set up an appointment for in-depth research help.

University Policy on Academic Honesty

You are scholars and should have integrity in your work. You will work in teams to prepare material for assigned topics, and each student should actively engage in the development of the materials. We will levy the highest possible consequences for lack of integrity in working with your team on topics assigned to you. Please see the general catalog section on Policies and Guiding Principles for more information on academic integrity (http://www.catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf).

University Policy on Special Needs

The University provides services for students with special needs through Resources for Disabled Students (RDS). If you have a special need, we encourage you to contact RDS for more information about the services that can be provided, including alternative testing, alternative text conversion, note taking support, accessible transportation, sign language/oral interpreting. RDS can be contacted at 491-6385, and the office's website is http://www.rds.colostate.edu/.