PA 5721: Energy & Environmental Policy
University of Minnesota
Fall 2017

Course Description
Energy is an integral part of modern society, but our energy use causes many of the environmental problems we face today. In this class we will explore how the technical, economic, and political characteristics of energy systems shape and limit the policies that regulate them. This course has two primary goals: First, to give you an overview of current policies that regulate energy-related environmental harms. Second, to give you the tools and knowledge to identify opportunities to change the regulations or the energy systems themselves.

Course Objectives
• Become familiar with different types of environmental regulation and their strengths and weaknesses
• Understand how the special characteristics of particular forms of energy and energy use affect how they are regulated
• Understand basic technical details of energy and environmental harms
• Be able to do simple engineering and financial calculations related to energy
• Practice several methods of communication (writing, presentation, and video) to inform and persuade

Logistical Details
Time and location: Monday and Wednesday, 4:00 – 5:15 PM in Blegen Hall 230
Instructor: Dr. Stephen Rose (roses@umn.edu)
Institute on the Environment
Mailbox: Learning and Environmental Science Building (St. Paul Campus)
Office hours: Monday 3:00 – 4:00, Wednesday 1:00 – 2:00 in Humphrey School room 175
Credits: 3

Pre-Requisites
No course pre-requisites. Students should be familiar with the basics of spreadsheet software (e.g. Microsoft Excel).
Course Overview

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<td><strong>Week 1</strong></td>
<td>Syllabus and administrative</td>
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<td><strong>Week 2</strong> Library orientation</td>
<td>Energy units and estimation</td>
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<td><strong>Week 3</strong> Energy today, Video project desc.</td>
<td>Overview of environmental harms</td>
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<td><strong>Week 4</strong> Science of climate change</td>
<td>Environmental justice</td>
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<td><strong>Week 5</strong> Econ. discounting (HW in class)</td>
<td>Energy efficiency</td>
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<td><strong>Week 6</strong> Economic rationale for regulation</td>
<td>Regulatory strategies and process</td>
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<td><strong>Week 7</strong> Policy Institutions</td>
<td>Energy extraction: production</td>
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<td><strong>Week 8</strong> Energy extraction: end-of-life</td>
<td>Electricity: regulating emissions</td>
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<td><strong>Week 9</strong> Electricity: clean generation</td>
<td>Mid-term review of video projects</td>
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<td><strong>Week 10</strong> Electricity: guest lecture</td>
<td>Transportation: regulating emission</td>
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<td><strong>Week 11</strong> Trans.: biofuels and electricity</td>
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<td><strong>Week 12</strong> Energy poverty: guest lecture</td>
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<td><strong>Week 13</strong> Energy subsidies</td>
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<td><strong>Week 14</strong> Group project presentations</td>
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Grading

- 10% Class participation
- 10% Online questions and comments
- 10% Individual “hot topic” presentation
- 30% Homework
  - 5% Problem set 1: Unit conversions
  - 5% Problem set 2: Life-cycle analysis
  - 10% Problem set 3: Discounting
  - 10% Op-Ed piece
- 40% Group project
  - 15% Video
    - Mid term review (in class)
    - Final review (outside class)
  - 15% Class presentation
  - 10% Policy brief

- Assignments are due at the beginning of class on the designated date. Late assignments will lose 3 percentage points per day after the due date.
• You must request re-grading within 1 week of the date the assignment is returned to you or the grades are posted, whichever comes first. If you want your assignment re-graded, you must prepare a brief written documentation supporting the re-grade request (i.e., describe your concerns about the score given, provide an argument for a different score), which should be attached to the front of the graded assignment and given to the instructor, or placed in our mailboxes. If you put the documents in our mailbox, please also send along an email to make sure I check promptly. I will re-grade the entire assignment.

Class Participation (10%)
This is a discussion-based class. I expect you to come to class having read the assigned reading and responded with questions on the Moodle Site by noon the day before class. You will get credit each day you participate in class.

Online Questions and Comments (10%)
You must post a 3-5-sentence question or comment related to the assigned reading on the Moodle site by noon the day of class for each lecture reading is assigned. The forum will automatically make others’ posts visible to you after you have submitted yours. These questions/comments will give you an opportunity to think critically about the reading, give the instructors feedback on your understanding, and help focus the in-class lectures and discussions on issues you find important.

Examples of excellent comments/questions:
  • I don't' think Author X made a convincing argument that ____ because ____.
  • I was disappointed that Author X ignored the issue of ___, which is important because ___.
  • Under cap-and-trade policies how are greenhouse gas emissions measured and how are caps enforced?

“Hot Topic” Presentation (5%)
Each student will give a 4-5 minute presentation once during the semester. The presentation should discuss the latest trends on energy and environmental issues—things that are happening now, that are interesting, and beyond the scope of class. Each student will choose a date and present on that day. You will be graded on the following basis:

5 pts  Appropriate, interesting, and current topic
3 pts  Presentation style
2 pts  Timing: not too short, not too long

Homework (30%)
There will be five homework assignments: three problem sets and two moderate-length writing assignments. A summary of the grading rubric will be attached to each assignment.

The two problem sets consist of quantitative calculations and a few short written answers. The calculations will be evaluated on your thinking process, (outlining your problem, stating your
assumptions, showing your work, explaining your thinking process as clearly as possible) as well as the answer obtained. The written answers will be evaluated on your comprehension and assimilation of the course readings and material. You are encouraged to do individual work supported within a larger study group (i.e. do your own work, but use the other course members as resources for help and support) and to discuss the problems and your analyses with your fellow students.

The two moderate-length writing assignments will ask you to think more deeply about a topic and convey your thoughts in clear, logical writing. The first assignment asks you to summarize and also analyze a paper published in an academic journal. The second assignment asks you write an “Op-Ed piece” to persuade a general audience of some point. Remember, presentation, formatting, grammar, etc. are important to the instructors and will probably be important to your future employers. Part of your grade on these assignments will depend on these factors.

**Group Project (40%)**

The final group project consists of 3 parts: a video (15%), an accompanying in-class presentation (15%), and a written policy brief (10%). You will work together with a group to develop a presentation on some issue related to energy and environmental policy. Groups should work together to come up with a topic that explores in greater detail and in more depth an issue raised in class or one related to the course content that was not covered in class. The purpose of this assignment is for you to explore some issue in greater depth than we have time to cover in lectures and teach your peers and instructors about it. Examples of possible topics include: “Evaluation of Carbon Offset Programs”, “Review/critique of laws and legislation in Minnesota related to renewable energy”, “Review of status of global fisheries”, “Evaluation of ‘eating local’ culture on energy use”, or many others of your choice. Be creative!

I will review the video during mid-semester and suggest improvements. At the end of the semester, your group will fill one entire class period with your presentation, video, and policy brief. You will have the opportunity to evaluate the participation of your group members for their final grades.

**Academic Integrity**

You are expected to do your own academic work and cite sources of information as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. See the details of the University policy at [http://oscai.umn.edu/content/plagiarism](http://oscai.umn.edu/content/plagiarism). If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For a very entertaining introduction to plagiarism, see [https://youtu.be/Mwbw9KF-ACY](https://youtu.be/Mwbw9KF-ACY).
**Grading policy**

I will follow the standard University of Minnesota policy, which can be found at [http://policy.umn.edu/education/gradingtranscripts](http://policy.umn.edu/education/gradingtranscripts). In order to avoid all possible bias, PLEASE turn in your assignments with your student numbers ONLY.

**Stress and Mental Health**

[www.mentalhealth.umn.edu](http://www.mentalhealth.umn.edu)

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating, and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via [www.mentalhealth.umn.edu](http://www.mentalhealth.umn.edu). Remember that there are advisors in the Humphrey Student Services office who are trained and experienced counselors. They are available at short notice to address any concerns you have and provide further resources within the University. **Humphrey Student Services, HHH 280, (612)624-3800**

**Disability Accommodations**

[https://diversity.umn.edu/disability/](https://diversity.umn.edu/disability/)

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. Disability Services (DS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at (612)626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations. If you are registered with DS and have a current letter requesting reasonable accommodations, I encourage you to contact your instructor early in the semester to review how the accommodations will be applied in the course.

**Personal Electronics in Class**

You may occasionally use personal electronic devices (phones, computers, etc.) during class as long as they do not distract other students or the instructors. If you do use electronic devices during class, please sit in the back of the classroom. If your use becomes excessive, I will ask you to stop.

**Sexual Harassment**

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: [http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf](http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf).
**Equity, Diversity, Equal Opportunity, and Affirmative Action:**
The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy:

**Academic Freedom and Responsibility:**
Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

**Student Conduct Code**
The University seeks an environment that promotes academic achievement and integrity that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community. To review the Student Conduct Code, please see
http://oscai.umn.edu/know-code/scc-simplified.

**Appropriate Student Use of Class Notes and Course Materials**
Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see:
http://policy.umn.edu/education/studentresp.