Course Description
Rachel Carson’s 1962 publication *Silent Spring* harkened the beginning of the environmental citizen science movement in America. This knowledge revolution suggested that everyday citizens had an important role to play in deciding, observing and contesting how science and technology were being developed and implemented for the good of humanity and the natural world. In our present day, the Silent Spring Institute based in Cape Cod continues to push Carson’s agenda forward on important enviro-scientific controversies like the fight against breast cancer.

Taking our cue from Carson, this course examines the role of citizens in environmental decision-making. We will focus on environmental controversies as important sites for examining how information, science and governance come together. Through our engagement with a range of environmental controversies we will think through some core concepts: risk, uncertainty, expertise, transparency, credibility, trust, deliberation and citizenship.

Students will also be introduced to the field of science and technology studies (STS). STS scholars have been at the forefront of thinking about how citizens are involved in the production and deployment of science and technology. STS frameworks will help us evaluate how we understand and construct avenues for public engagement on these fundamental societal questions.
Student Evaluation
Students will be evaluated on the basis of:

1) Attendance & participation (20%)
You are expected to attend every class. If you must be absent due to illness or other extenuating circumstance, contact me as soon as possible. More than one absence may result in a reduction in your participation grade. If you are late to class regularly, this may be counted as an absence. You are responsible for checking in with your peers for missed material. Your participation grade will be based on thoughtful, respectful, and productive engagement in class discussions. Your creativity is always encouraged.

2) Submission of reading reflections (20%)
Reading reflections are intended to encourage you to synthesize reading material and help me organize our class discussions. Your reflections are due by 10am the day of class. Your pieces should be approximately 300-400 words in length, about two to three paragraphs. They must be submitted through the course website. DO NOT e-mail reflections to me. Late reading reflections will not be accepted. These will be graded on a satisfactory or outstanding basis for each submission. Occasionally, I will respond directly to your submission on Moodle. Most times, I will refer to issues raised in your reflections in class. See Guide to Writing Reading Reflections on the Moodle site.

3) Co-leading class discussion twice (20%)
Beginning in late Feb/early March, you will be asked to co-lead class twice. Working in a small group, you will be responsible for leading a CASE STUDY PROJECT and a FILM DISCUSSION. More details about the expectations for each of these assignments will follow. You are not expected to turn in a reflection when you are leading classes.

4) Organizing Citizens League event (10%)
We will be working in partnership with the Citizens League this semester. The Civic Engagement Office is sponsoring memberships for all students in this course. We will be meeting with CL staff to help organize one of their Intergenerational Series events this Spring. You will be expected to participate in this project. We will work throughout the first half of the semester to choose a theme, organize and publicize the event.

5) Controversy Study – Website Project (Total 30%)
You will choose a controversy to follow throughout the semester. See the final page of this syllabus for some topic examples. You can also see past student projects at:
http://www.macalester.edu/environmentalstudies/students/projects/projects.htm

This research project will be evaluated in four stages throughout the semester. You will be asked to present your 1) preliminary idea (March 11) 2) an outline & workplan (April 6) 3) a working draft (April 22) and 4) a final project (May 4/May 7). The format for the assignment will be a web page. Toward the end of the semester we will working on basic web page design skills. More details about the project will follow. The website will be equivalent to a 10 page paper.

If you submit any of the above assignments late, you WILL be graded down one full step for each day past the deadline. For example, an assignment handed in one day late will begin with a B+; two days late a C+. 
Final Grade Scale: A (96-100); A- (91-95); B+ (87-90); B (83-86); B- (80-82)
Similar ranges for C grades (70-79) and D grades (60-69); Below 60 is a failing grade.

Academic Integrity: It is assumed that all members of the class will act with academic integrity and will not engage in behavior such as plagiarism, academic dishonesty, misrepresentation, or cheating. Please refer to the college's policy on academic honesty.

Summary of Topics and Readings

** There are two required books available at book store:

Tues Jan 26: Course Introduction

Part I: Introduction to Science, Technology and Politics

Thurs Jan 28: Do we trust science/scientists?

Tues Feb 2: Do we trust democracy?
- National Science Foundation. 2004. *Survey of Public Attitudes Toward and Understanding of Science and Technology*.

Thurs Feb 4: Sustainability Science in the Age of Uncertainty
* Watch Nate Lewis’ Jet Propulsion Lab Climate lecture in class

Tues Feb 9: Restoring Science to its “Rightful Place” – With special guests Macalester science faculty Mark Davis, Devavani Chatterjea & Louisa Bradtmiller

Thurs Feb 11: Models of Citizen Science

**Tues Feb 16: Science and/in Society**
Invited guests – Catherine Beltman and Nick Banovetz, Citizens League
Reading TBA

* Extra credit – Attend the Café Scientifique at Bryant-Lake Bowl Uptown at 7pm

**Waste = Food**
- Check out website - http://www.cafescientifique.org
* Submit a post-event reflection for extra credit

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**Part II: Case Study Modules**

**Topic A: Environmental health and justice**
**Thurs Feb 18: Lecture: Are We a Toxic Nation?**
- Visit [http://isitinus.org/](http://isitinus.org/)

**Tues Feb 23** Student led citizen science project - Designing a Twin Cities toxic tour

**Thurs Feb 25: Student led film discussion - *Erin Brockovich or A Civil Action***

**Topic B: Food Safety**
**Tues March 2: Lecture: Agriculture, Genes and Power**

March 3: Optional: Toxics Tour with Paul Schadewald, Civic Engagement Center
Leave at 12pm

**Thurs March 4: Student led citizen science project – A Cloned Food Labeling Act?**

**Tues March 9:** Film - *Soylent Green*

**Thurs March 11: RESEARCH DAY 1:** Submit your idea for a final project on Moodle on Thursday by 5pm. We’ll share ideas in class.

***SPRING BREAK March 15-19***

**Topic C: Geoengineering the Climate**
**Tues March 23: Lecture: Weather Modification and other Technological Silver Bullets**
Thurs March 25: Student led citizen science project - Simulating Asilomar 2010

Tues March 30: Film – The Core

Thurs April 6: RESEARCH DAY 2: Share an outline of your paper and describe the ways in which you are building on citizen science scholarship.

Thurs April 8: Attend the IGC Civic Forum

Topic D: Regulating the Power Industry
Tues April 13: Lecture: Accidents and Incidents

Tues April 15: Student led workshop – Expanded waste storage at Prairie Island

Tues April 20: Student led film discussion - The China Syndrome

Thurs April 22: RESEARCH DAY 3 Peer review drafts in small groups in class and discuss your plans for further development

Tues April 27: New Frontiers in Science and Democracy - Special guest Chuck Green

Thurs April 29 – Roopali in Washington DC
- Kai Bosworth will hold a web workshop during class time

Tues May 4: DEBUT WEBSITES IN CLASS

FINAL WEBSITE DUE FRIDAY MAY 7 by 4pm.
A Guide to Writing Reading Reflections

Reading reflections are meant to help you synthesize the readings and begin articulating your personal positions on the issues to be discussed in class.

Ideally, your piece will:
1) highlight issues you found interesting, surprising or confusing across the readings assigned for that class session
2) raise questions that you think we should discuss in class

Your piece can also focus on addressing one or more of the following questions:

- What is the significance of this set of reading?
- What questions do they raise and/or attempt to address?
- How do they fit with, challenge, reflect/concur, and/or link with other readings and approaches taken in the course material?
- Do you find the arguments and presentation of material compelling, convincing, persuasive and how so?

Reflections are due by 10am the morning night before class. Your pieces should be approximately 300-400 words in length, roughly three paragraphs.

You must upload your assignment to the Moodle site for that date.

**NOTE**: The Moodle clock does not always correspond to yours – Moodle will timeout at 9pm so don’t wait until the last minute.

Please DO NOT e-mail reflections to me – I simply can’t handle that volume of emails. Late reading reflections will not be accepted.

Occasionally, I will respond directly to your submission on Moodle. Most times, I will refer to issues raised in your reflections in class.

Reflections will be graded on an unsatisfactory (= C), satisfactory (=B) or outstanding (=A) basis for each submission.

An unsatisfactory grade is for a poor and incoherent piece that does not connect to the assigned texts.
A satisfactory grade represents a reflection that minimally commented on the reading, offering more summary than extended critical reflection.
An outstanding grade represents a reflection that provided critical commentary and suggested some class discussion points.

**Most importantly** - Reflections are not intended to be busy work. I want to know if you found the material interesting and challenging. Your writing also helps me direct our class discussions. For those students who are less likely to feel comfortable speaking often in class, this is my best chance at knowing your thoughts.
SAMPLE OF FINAL PROJECT CONTROVERSY TOPICS

Silicon Breast Gel Implants
Approval of RU 486
Stem cell research
Nanotechnology
Endocrine Disruptors
Atrozime and frogs
DDT Use
Human and Animal Cloning
Wind energy
Cryogenics
Bioprospecting

EXAMPLES of past web projects can be found at
http://www.macalester.edu/environmentalstudies/students/projects/projects.htm