

STS 200-6 AND 7: Science, Technology, and Sustainable Agriculture

Or, Bringing Engineers into the Foodshed

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Course meeting time and place

200-6, Tues/Thursday, 9:30-10:45 am, in THN D-115

200-7, Tues/Thursday, 11:00-12:15 pm, in THN D-115

General Course Overview

This course examines sustainable agriculture—and its associated elements, organic farming and the local food movement—as a topic of technology, design, and community infrastructure. It is, to that end, an interdisciplinary inquiry into the history, values, and politics of science, technology, and sustainable agriculture. The course begins with a study of relationships between technology and nature (Part I); it then examines the changing technological character of agricultural systems and food production in the twentieth century (Part II); and then (Part III) it focuses on a series of local cases that illustrate opportunities to develop a sustainable agricultural foodshed. The trajectory of the course is to move from general studies of theory and philosophy about technology and nature to specific cases of foodshed design in the Charlottesville area—considering production, distribution, and consumption. Over the course of the semester, students will work in groups towards their final project, a video podcast and written report of one such case. The course is reading, writing, and discussion intensive, with occasional guest speakers from the Charlottesville community, and a requirement for student engagement with community members and food and agricultural issues.

Credit Distribution

- 25% Homework (including Film Write-ups and other minor assignments throughout)
- 25% Class participation (including debriefings on to the class on projects and local issues)
- 10% Mid-term essay
- 40% Final project
 - 20% Final group project: Podcast
 - 15% Final group project: written report
 - 5% Final project: progress reports by individual group members

Course websites

We are using the Collab website for all course materials: <https://collab.itc.virginia.edu/portal>.

We'll be building this website as a product of the course: <http://www.sts.virginia.edu/foodshed>.

Texts for the semester

Almost all readings will either be available on-line (as linked through the course Collab homepage) or posted as *.pdf files at Collab. There is one required text:

- Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals* (New York: Penguin, 2006)

Basic expectations

This course is reading, writing, and discussion intensive. You will be required to contribute to class discussions throughout the semester; to produce high quality writing (in the form of homework, essays, film reviews, and a final project); and to work as a part of a group to produce a final video podcast project (along with a written report). Excellence in written work will not make up for delinquency in attendance. More than one unexcused absence will result in penalties to your grade. The class participation portion of your grade will be based on attentiveness, preparedness, and active participation in classroom activities, debriefing of a local agro-food issue to the rest of the class, and performance on class quizzes. To be clear, students are expected to actively participate in class discussions, and will be graded on the considerateness of their comments and their ability to assimilate readings with discussions.

Additionally, please note that:

- Late assignments are not accepted, nor are assignments submitted via e-mail.
- If you must miss a class, assignments are due before the class period begins.
- Always arrive at class on time. Lateness is both disrespectful to the instructor and to your classmates. Arriving late to class an inordinate amount of times (more than two) will result in penalties in class participation. Students may miss one unexcused class without penalty per semester.

Written assignments should be typed on one side of the paper. Assignments should be double-spaced, using standard fonts (12 point) and one-inch margins. In assignments involving illustrations and visual materials, students are permitted more flexibility in terms of layout, fonts, and margins. All diagrams, charts, and tables must be appropriately labeled. Please be sure to staple multi-page assignments and number the pages for printed assignments. Always make and keep a copy of each assignment. All papers must be carefully proofread.

With regard to reading assignments, I assume that you will read the articles or pages listed for a particular class *prior* to that class. Also note that I will give occasional unannounced reading quizzes.

Accommodations

Should you have a learning disability that requires accommodation, I would be grateful if you would advise me privately of your situation at the beginning of the semester. I will be open to any necessary and formal accommodations. I appreciate that you bring them to my attention in due time.

Honor and Academic Integrity

Student-teacher relationships require trust. For example, students must trust that teachers have made responsible decisions about the structure and content of the courses they teach, and teachers must trust that the assignments students turn in are theirs. Acts that violate this trust (by the teacher or the student) undermine the educational process. UVA and the School of Engineering and Applied Science have an Honor System that helps maintain a community of

trust. We firmly endorse, uphold, and embrace the University's Honor principle that students will not lie, cheat, or steal, nor shall they tolerate those who do. We recognize that even one honor infraction can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the principles of honor will benefit every member of the community both while enrolled in the Engineering School and in the future.

I also expect that you will sign and date all written assignments for this course with the UVA pledge.

Grading Schema

A+ (98>)	A (93-97)	A- (90-92)
B+ (87-89)	B (83-86)	B- (80-82)
C+ (77-79)	C (73-76)	C- (70-72)
D+ (67-69)	D (63-66)	D- (60-62)

Course concepts and method: Two ways to approach technology, agriculture, and food

1. In the first half of the course, we look to the kinds of technologies that are used to produce food and the technologies that interact with the land to redefine agricultural landscapes. We want to understand those technologies as socio-technical systems.
2. In the second half of the course, we look more at how food systems—the local foodshed, food infrastructure, the relationships between producer, nature, and consumer—are themselves socio-technical systems. Your final project will be a socio-technical analysis of one of these systems.

General Course Outline [specific syllabus follows below]

Intro: BRINGING ENGINEERS INTO THE FOODSHED (1.5 weeks)

In the first weeks of the course, we will introduce, review, and clarify basic terms in STS and environmental history. Three points of focus in particular are the concepts of “the social shaping of technology,” “technologies as socio-technical systems,” and “foodsheds as technologies.”

Part I: TECHNOLOGY AND NATURE (3 weeks)

In this first main part to the class, we will step back to develop a better understanding of the historical relationships between technology and nature. This section, broadly speaking, will have the character of a philosophy and history conversation.

Part II: AGRICULTURE AS TECHNOLOGY (3 weeks)

In this part of the course, we will use agriculture as a specific case study of technology-nature relationships, seeking to discuss how and why food-production and agricultural technologies have developed over the past century. This section, broadly speaking, brings a focus on history, politics, and culture.

Part III: CONTEMPORARY LOCAL CASES: REDESIGNING THE FOODSHED (6 weeks)

This section is the payout for using Part II to transition between our general focus on philosophies of technology (in Part I) to our ultimate goal in the class of speaking to current and local examples of foodshed issues. With attention to community, culture, and sustainability, we will use Part III to develop our final projects, ground them in the literature, recognize them as examples of community-based environmental design, and understand them as specific cases of the foodshed *as* a technology.

SYLLABUS, VER. 5 (revised 3/22)

	Tuesday	Thursday
Week 1 <i>Intro</i>		15 Jan. What is Sci., Tech. and Sust. Ag? Read by 1/27: Pollan, <i>O.D.</i> , 1-133
Week 2	20 Jan. Local food issues Read: Berry (Eating); Black (Chipotle); McEvoy (\$5 Tomato) Due: HW#1 (food biography) <i>Inauguration Day: classes do not meet.</i>	22 Jan. View by 2/3: <i>King Corn</i>
Week 3 <i>Part I:</i> <i>Tech. & Nature</i>	27 Jan. Concepts (foodshed; technology) Read: Kloppenburg (Foodshed)	29 Jan. Origins of industrial logic Read: Required: Porter (quantification); Scott (nature and space) Optional: <i>OED</i> entries on “Nature” and “Technology”
Week 4	3 Feb. Controlling nature w/ tech. thinking Read: Cronon (the railroad); Cowan (Industrialization) Due: HW#2 (Film response)	5 Feb. Controlling nature w/ tech. things Read: McPhee (rivers) Optional: Steinberg (weather) <i>[Guest speaker #1: N. Halvorson-Taylor, Virtual Marketplace and Urban Farm]</i>
Week 5	10 Feb. Mediating interaction w/ nature Read: D. Meinig (landscape); R. Howard (images) [Optional: J. Price (On L.A.)]	12 Feb. ...continue mediation. <i>[Guest speaker #2 –C. Nettles, Food Rescue]</i> Due: HW#3 (mediated experience)
Week 6 <i>Part II:</i> <i>Ag., Food, & Tech.</i>	17 Feb Culture, agriculture, and technology Read: Steinberg (Moveable Feast); L. Cohen (Consumers [video]) Due: Project Choice; 1-page brief <i>[Guest speaker #3 – L. Wagner; Artisanal Food]</i>	19 Feb. ...cont. culture, ag., and technology <i>[Guest speaker #4: E. Spellman, Community Garden]</i> View by 2/24: <i>Our Daily Bread</i>
Week 7	24 Feb. ...cont. culture, ag., and technology, case study: milk Read: DuPuis (milk); Sayre (raw milk) <i>[Guest speaker #5: L. Reeder, Advisory Board, Local Food Hub]</i>	26 Feb. Due: Annotated project bibliography Due on the 27th: Midterm Essay
SPRING BREAK		
Week 8 <i>Part III:</i> <i>The Local & Contemporary</i>	10 Mar. Read: J. Guthman, “The Paradox of Organic”; J. Cloud, “Eating Better than Organic?” [Optional: Mooallem (meat)]	12 Mar. Project discussions View by 3/17: <i>The Real Dirt on Farmer John</i>
Week 9	17 Mar. Read: Pollan, <i>O.D.</i> , chapters 9, 10, and 13 [about Organic and Polyface]	19 Mar. Project working meeting Due: HW#4 (Film response) <i>[Guest speaker #5 – T. D. Cobb, state food council]</i>
Week 10	24 Mar. Due: Podcast storyboard for in-class discussion	26 Mar. ...continue with podcasts Due: HW#5 (local food scavenger hunt)

	Tuesday	Thursday
Week 11	31 Mar. Due: first full draft of written report Read: Bittman; Black; and Martin	2 Apr. Project working meeting
Week 12	7 Apr. Project updates to class Read: Severson and Martin View: Stahl Due: Podcast in full for class critique	9 Apr. Continue with Project updates to class Due: HW#6 (food diary)
Week 13	14 Apr. Read: Quazi and Selfa; Kloppenburg, et al. (re-read) Due: second full draft of written report	16 Apr. Project working meeting
Week 14	21 Apr. Preparation for final versions	23 Apr. Final Podcast due: class viewing
Week 15	28 Apr. Course wrap-up and final reports due Community Event at Jefferson-Madison Library, downtown Charlottesville, 2-4:30 pm	

Films on Reserve at the Robertson Media Center in Clemons Library

1. *King Corn* (DVD08324)
2. *Our Daily Bread* (DVD09371)
3. *The Real Dirt on Farmer John* (DVD09932)
4. *Food Miles* (not in library; http://www.pbs.org/e2/episodes/309_food_miles_trailer.html)
5. *The Future of Food* (DVD30296: <http://www.thefutureoffood.com/>)
6. *Deconstructing Supper* (DVD08361)
7. *East of Eden* (DVD04850)
8. *Food, Inc.* (forthcoming, 2009)

Reading list and full bibliography for readings listed in syllabus or linked from website:

- Barlett, Donald and James B. Steele (2008). Monsanto's Harvest of Fear. *Vanity Fair*. Retrieved on January 15, 2009 from the *Vanity Fair* website:
<http://www.vanityfair.com/politics/features/2008/05/monsanto200805>
- Belasco, Warren (2006). *Meals to Come: The History of the Future of Food*. Berkeley: University of California Press.
- Berry, Wendell (1990). The Pleasures of Eating. In *What Are People For?* (pp. 145-152). New York: FSG.
- Bittman, Mark (2009, March 21). Eating Food That's Better For You, Organic or Not. *The New York Times*. Retrieved on March 22, 2009 from *The New York Times* website:
<http://www.nytimes.com/2009/03/22/weekinreview/22bittman.html?em>.
- Black, Jane (2008, March 26) In Trial Run, Chipotle Heads to the Farm. *Washington Post*, p. F01
- Black, Jane (2009, March 20). [Shovel-Ready Project: A White House Garden](#). *Washington Post*, p. C01. Retrieved on March 28, 2009 from the *Washington Post* website:
<http://www.washingtonpost.com/wp-dyn/content/article/2009/03/19/AR2009031902886.html?sub=AR>

- Cloud, John (2007, March 2). Eating Better than Organic? *Time*. Retrieved on January 15, 2009 from the *Time* website:
<http://www.time.com/time/magazine/article/0,9171,1595245,00.html>.
- Cohen, Lizabeth. (2003, March 13). A Consumers' Republic: The Politics of Mass Consumption in Postwar America. Retrieved on February 12, 2009 from the UVA Newsmakers webpage: <http://www.virginia.edu/uvanewsmakers/newsmakers/cohen.html>.
- Cowan, Ruth Schwartz (1997). Industrial Society and Technological Systems. In Cowan, A *Social History of Technology in America* (pp. 149-172). New York: Oxford University Press.
- Cronon, William (1992). Railroad Time. In Cronon, *Nature's Metropolis: Chicago and the Great West* (pp. 63-81). New York: W.W. Norton.
- DuBow, Shane (1999) Wheaties: Chasing the Ripening Harvest across America's Great Plains. *Harper's* (August): 33-44.
- DuPuis, E. Melanie (2002). *Nature's Perfect Food: How Milk Became America's Drink* (pp.18-37). New York: NYU Press.
- Guthman, Julie (2004). *Agrarian Dreams: The Paradox of Organic Farming in California*. Berkeley: University of California Press.
- Horowitz, Roger (2006) *Putting Meat on the American Table: Taste, Technology, Transformation*. Baltimore, MD: Johns Hopkins University Press.
- Howard, Rhonda (2000). Framing the Landscape: The picture window, TVs, Planes, and Automobiles. In *Shifting Ground: Transformed Views of the American Landscape* (pp. 35-42). From an Exhibition held at the Henry Art Gallery, February-August 2000. Seattle, WA: University of Washington.
- Johnson, Nathanael (2006). Swine of the Times: The Making of the Modern Pig. *Harper's* 312 (1872): 47-56. Retrieved on January 4, 2009 from the *Harper's* website:
<http://www.harpers.org/archive/2006/05/0081030>.
- Kloppenburger, Jack, John Hendrickson and G. W. Stevenson (1996). Coming into the Foodshed. *Agriculture and Human Values*, 13: 33-42.
- Martin, Andrew (2009, March 21). [Is a Food Revolution Now in Season?](#) *The New York Times*. Retrieved on March 28, 2009 from the New York Times website:
http://www.nytimes.com/2009/03/22/business/22food.html?_r=2&em.
- McEvoy, Meg (2006, August 1). The \$5 Tomato. *C-Ville Weekly*, Issue 18.31, Retrieved on January 16, 2009 from C-ville website: http://www.c-ville.com/index.php?cat=121304062461064&ShowArticle_ID=1833107062918053
- McPhee, John (1987). Atchafalaya. In McPhee, *The Control of Nature* (pp. 3-92). New York: FSG.
- Meinig, Donald (1979). The Beholding Eye: Ten Versions of the Same Scene. In D. W. Meinig and John Brinckerhoff Jackson (eds.), *The Interpretation of Ordinary Landscapes: Geographical Essays* (pp. 33-48). New York: Oxford University Press.
- Melosi, Martin (1988). Hazardous Waste and Environmental Liability: An Historical Perspective. *Houston Law Review*, 25: 741-753.
- Mooallem, Jon (2005). Carnivores, Capitalists, And The Meat We Read. *The Believer*, 3 (October). Retrieved on January 15, 2009 from *The Believer* website:
http://www.believmag.com/issues/200510/?read=article_mooallem.
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<http://www.nytimes.com/2008/10/12/magazine/12policy-t.html>.
- Porter, Ted (1995). Standardizing Measures. In Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (pp. 22-29). Princeton, NJ: Princeton University Press.
- Price, Jennifer (2006) Thirteen Ways of Seeing Nature in L.A. *The Believer*, 4 (April). Retrieved on January 15, 2009 from *The Believer* website:
http://www.believmag.com/issues/200604/?read=article_price.
- Quazi, Joan and Theresa Selfa (2005). The Politics of Building Alternative Agro-food Networks in the Belly of Agro-industry. *Food, Culture, and Society* 8 (1): 45-72.
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http://www.newyorker.com/archive/2006/05/15/060515crat_atlarge.
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<http://www.cbsnews.com/stories/2009/03/13/60minutes/main4863738.shtml>.
- Steinberg, Ted (1995). Cloudbusting in Fulton County. In Steinberg, *Slide Mountain; Or, the Folly of Owning Nature* (pp. 106-134). Berkeley: University of California Press.
- Steinberg, Ted (2002). A Moveable Feast. In Steinberg, *Down to Earth: Nature's Role in American History* (pp. 174-189). Oxford: Oxford University Press.