

ACR 891 Technology, Ethics and Sustainability Science -- 3 Hours

Spring 2010 Mondays 6:00 — 9:00 pm Room 135 South Kedzie Hall

INSTRUCTOR: Paul B. Thompson thomp649@msu.edu

OFFICE HOURS: M 2-4 526 S. Kedzie Hall Other hours in Natural Resources 330 are by appointment Please contact Julie Eckinger jeckingr@msu.edu or call 432 0317.

PURPOSE: The course will provide advanced students with an opportunity for in depth critical reading and discussion of recent materials in the history, philosophy and sociology of science as they pertain to the overarching task of orienting scientific methods and practice toward complex problems collected under the umbrella term of sustainability.

RATIONALE: Recent calls for applied and action-oriented research to support social change toward a more sustainable society or a more sustainable agriculture presupposes a critique of mainstream applied science as it developed throughout most of the 20th century. That critique emerged from a number of different disciplinary perspectives over the course of more than twenty years. In the first decade of the 21st century, it coalesced around episodes in which scientific consensus was either sharply criticized or politically rejected (e.g. GMOs and climate science), and resulted in a new call within scientific institutions to practice a form of science that would be attuned to the importance of quasi-political processes, including NRC-type or UN and OECD report writing, and the accomplishments of the IPPC. This course will equip students working toward applied social science degrees with an orientation to the key elements in that critique and give them an opportunity to reflect on contrasting visions of how science and technology are embedded in social relations.

COURSE METHODS: This is essentially a classic “read and discuss” seminar. My teaching method in advanced seminars is to assign a primary reading of about 40 pages, with strongly suggested additional readings of perhaps an additional 40-60 pages each week. When possible I prefer to have students kick off the discussion of the primary reading by having one student do a brief (e.g. 10 minute) précis and propose some critical comments or questions for discussion. When things go well I am able to interject a few points as the discussion progresses. Generally, I find that my most useful contribution is to provide some additional context to the readings or to supplement them with discussion of key terms and concepts. Ideally I would do this with a brief presentation at the midpoint of the session, and discussion would continue. In addition to the “read and talk” component of the weekly meeting, I will meet independently with each student to develop and support a semester project.

GRADES: Grades will be based on four elements. 1. Participation (10%): Students who attend and participate in 12 of 15 sessions will receive full credit for participation. Students who miss more than 3 sessions will have participation component reduced by 2 points (e.g. 20%) for each additional class missed. 2. Précis (10%). Each student will present one oral précis of an assigned reading during the semester. I will assign a grade to this presentation on a 15 point scale. 3. Two Short Essays (10% each). I will assign two essays to be written out of class on assigned materials. 4. Class Project: Proposal (10%)

Final Effort (50%). Each student should design a class project in conjunction with the instructor. In most cases this will be a conventional term paper of between 15 and 30 pages in length. Students who wish to undertake a more applied project may do so. In any case, each student should present a proposal of approximately 2 pages with a few bibliography items. When approved after consultation with the instructor, proposals will need to be completed and some written report will need to be submitted by the end of the final examination period.

REQUIRED TEXTS: The following books have been ordered:

Ben Minteer, Ed. *Nature in Common*. (Philadelphia: 2009, Temple University Press).

Bryan Norton, *Sustainability: A Philosophy of Adaptive Ecosystem Management* (Chicago: 2005, U. Chicago Press).

Roger Pielke, Jr. *The Honest Broker: Making Sense of Science in Policy and Politics* (Cambridge: 2007, Cambridge U. Press).

Robert Zimdahl, *Agriculture's Ethical Horizon* (New York: 2007, Academic Press).

OPTIONAL TEXTS: Substantial portions of the following books will be used:

Harry Collins and Trevor Pinch, *The Golem at Large*, (Cambridge: 2002, Cambridge U. Press).

Aiden Davison, *Sustainability and the Contested Meanings of Technology*, Albany, NY: 2001, SUNY Press.

Peter Taylor, *Unruly Complexity*, Chicago: 2005, University of Chicago Press.

COURSE CALENDAR AND READINGS:

Week 1, January 11, 2010: Sustainability Science: Orientation to the course and methods; discussion of recent articles that propose a new "sustainability science" from *Science* and *PNRS* on the Course ANGEL site, plus chapter 1, from Norton's *Sustainability*.

Week 2, January 18, 2010: Sociology of Science and Technology: Readings from Collins and Pinch's *The Golem at Large*, and Evans and Collins on expertise, posted on the ANGEL site

Week 3, January 25: Wickedness. Rittel and Webber's original 1973 paper; Sandra Batie "Wicked Problems and Applied Economics, Bryan Norton's *Sustainability* Chapter 5; W. Ulrich, "Beyond Methodology Choice,"; Fear, Rosaen, Bawden and Foster-Fishman, *Coming to Critical Engagement*, Chapter 8 (Dr. Bawden will join us).

Week 4, Feb. 1: Postnormal Science: Funtowicz and Ravetz' original 1992 paper, with recent commentaries from Norton's *Sustainability* and others.

Week 5, Feb. 8: Science and Policy: Dave Guston, "Boundary Organizations," Sheila Jasanoff, "Beyond Epistemology," Dan Sarawitz' "How Science Makes Environmental Controversies Worse," Norton, pp. 379-507

Week 6, Feb. 15: Ethics: Robert Zimdahl, *Agriculture's Ethical Horizon*, Chapters 1-4.

Week 7, Feb. 23: Environmental Justice: Guest session with Kyle Whyte

Week 8, March 1: Science as a Social Network: Selection's from Bruno Latour's *Pandora's Hope*; Busch, Moral Economy of Grades & Standards; Busch & Tanaka, Rites of Passage;

Week 9, March 15: Science and Politics: Robert Pielke Jr's *The Honest Broker*

Week 10, March 23: Science, Democracy and Expertise: Jasanoff, (No?) Accounting for Expertise; Science and Citizenship; Evan Selinger, Paul Thompson and Harry Collins, Catastrophe Ethics; Selections from Norton's *Sustainability*;

Week 11, March 30: Conceptualizing Sustainability: Zimdahl, Chapters 7 and 9; C.S. Holling, Theories for Sustainable Futures; Robert Solow, An Almost Practical Step Toward Sustainability

Week 12 April 5: Sustainability as a Contested Concept: Selections from Paul Thompson's *The Agrarian Vision: Sustainability and Environmental Ethics*

Week 13, April 12: Sustainability and Environmental Philosophy: Readings from Ben Minteer's *Nature in Common*; selections from Norton's *Sustainability*

Week 14, April 19: Sustainability and Systems: Selections from Peter Taylor's *Unruly Complexity*, from Minteer's *Nature in Common* and Norton's *Sustainability*; Watch the Nova video, *Hunting the Hidden Dimension*.

Week 15, April 26: Sustainability, Pragmatism and Systems Thinking: Selections from Norton's *Sustainability*; Richard Bawden, "Valuing the epistemic in the search for betterment: the nature and role of critical learning systems" and "The Hawksbury Experience: Tales from a Road Less Traveled"