EGRS/EVST 373 (W): Technology and Nature

How will you go about finding that thing the nature of which is totally unknown to you?

Meno (pre-Socratic philosopher)

If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heartbeat, and we should die of that roar which lies on the other side of silence. As it is, the quickest of us walk about well wadded with stupidity. G. Eliot, *Middlemarch*

We have to remember that what we observe is not nature in itself, but nature exposed to our method of questioning. W. Heisenberg

Overview and General Information

Instructor	Benjamin Cohen
Office	304 Acopian Engineering Center, Engineering Studies
E-mail	cohenb@lafayette.edu
Office Hours	T/Th, 1:15-2:30pm, and by appointment
Readings	Required readings available as *.pdf or hyperlinks via Moodle
	Plus one book: N. Cullather, *The Hungry World* (Harvard University Press, 2010)

All EGRS and EVST courses work towards actively building and sustaining an inclusive community of learners and contributors. This class fully subscribes to Lafayette College's commitment to promoting diversity including (but not limited to) race, ethnicity, socioeconomic status, gender, gender identity, sexual orientation, religion, disability, and place of origin.

Class times and locations

T/Th, 9:30—10:45 am, Acopian 505, *plus select 4th Hour activities tba*

Course Outline

This course examines the sometimes-contentious relationship between the natural world and human attempts to understand it (science) and control it (technology). We survey ethical, social, artistic and scientific distinctions between the natural world and the human-built world though examples that include gardens, farms, trains, cars, bridges, buildings, cities, rivers, factories, and more. Throughout the course, artwork will serve as a common theme and reference point (sculpture, painting, film) to hold together technology and nature. In brief, the purpose of the course is to help students develop a nuanced understanding of the interactions amongst and between technology and nature.

The course begins by noting that how we distinguish between the natural and the technological often informs how we understand the pragmatic (what is possible) and the ethical (what is permissible). But how hard and fast are these boundaries, how can we instead examine

relationships between technology and nature instead of strict boundaries, and what can we learn from doing so? In pursuit of those questions, the first two-thirds of the course will open up questions about technology-nature relationships, provide background material that can act as fodder for discussion, and establish a vocabulary with which we can discuss the themes and issues of the course. How do we use technologies to *reveal* nature, to *control* and *manage* nature, or to *mediate our relationships with* nature? In the last third of the semester, we apply the questions and vocabulary to a specific and local example of technology-and-nature—sustainable relationships between technology, nature, and art right here at home.

OUTLINE OF SYLLABUS
Part I: Introduction: the very idea of technology, nature, and things between
Part II: Technology reveals nature
Part III: Technology controls nature
Part IV: Technology mediates our interactions in/with nature
Part V: Can we build sustainable relationships between technology and nature?

GRADES
20%   Class participation**:** *Attendance, preparation, discussion participation and leading, in-class writings, interest, and attention*
30%   HW + Film/Art responses: *composed in response to a series of films about technology and nature and a few scattered writing assignments*
20%   Essays #1 and #2: *due during weeks 4 and 8*
30%   Course project**:** *specifics to be determined in class, but to focus on alternative forms of integrating technology, nature, and art for a sustainable future*

Specific Student Outcomes:
1) Conduct analyses of the environmental contexts of technologies.
2) Understand the different ways humans define non-human nature.
3) Assess how different technologies promote different environmental ethics.
4) Identify the social, ethical, and economic issues surrounding your project.
5) Develop organization, management and teamwork skills.
6) Demonstrate proficiency with a variety of communications skills.

More about course expectations
Written assignments: For all submitted written work, I expect grammatical accuracy, mechanical soundness, and professional presentation. Sloppy and hurried writings reflect sloppy and hurried thinking. Students must always thoroughly proofread their work before submitting it. They are unacceptable for this course. Homework acts in part as a check on your reading comprehension, as a brief writing opportunity, and as a place to work through questions and observations brought out by course readings and discussions.

Class participation: Class participation includes active attentiveness, interest, curiosity, discussion contributions, and other assorted assignments. Mere attendance, which is required, will not be sufficient to receive an outstanding participation grade. For this reason, I reserve the right to drop you (fail you) for insufficient attendance (more than two classes of *unexcused* absences). Come to class with curiosity, intellectual ambition, an open mind, some healthy skepticism, and the willingness to engage our topics. If you do that, the rest will take care of itself. To help this cause, prepare to participate by

completing assigned readings and problems **prior** to the class period and spending time **critically analyzing** them. Excellence in written work will not make up for delinquency in attendance or lack of preparation for class discussion. Reading alone is insufficient. Students must read *and* analyze texts.

Class project: Students will play a role in defining the final shape of the ultimate course project, which will involve a series of design concepts to envision an imaginer sustainable future integrating technology, nature, and art

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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 am 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 trust that teachers make responsible decisions about the structure and content of their courses; teachers trust that the assignments students turn in are theirs. Acts that violate this trust undermine the educational process. Lafayette College maintains a community of trust by promoting a culture of honor, principle, and integrity. As a College of students, faculty, administrators, and staff, we work *as* a community to create such a culture. Therefore, when it comes to written and oral assignments, the words must be your own and you must cite those whose ideas you use. Please note that for group projects, where some of these terms and issues are muddied, we will discuss further the boundaries of ethical behavior and academic integrity.

Generative AI writing tools policy
This course prohibits the use of generative AI tools. Said use will be regarded as plagiarism. If you are uncertain whether the tools you use comply with the AI policy of this course, I encourage you to discuss it with me without hesitation. Maintaining academic integrity is of utmost importance, and I am here to clarify any concerns you may have regarding the AI tools you may seek to use. It is your responsibility to ask questions if you are uncertain about the usage of any generative AI programs/apps/tools in this course.

Final rules of the road
Ours is (1) not a laptop course, unless otherwise specified in class. Thus, along with (2) a standard request to silence and stow away your cell phones during class, students will keep laptop screens closed out of respect for peers and for the betterment of classroom atmosphere. I cannot (3) accept late homework assignments. If you must miss a class, assignments are due before the class period begins. Discuss with me promptly any assignments due in a class missed because of illness and always support your absences with endorsement through a Bailey's and/or Dean's Excuse.

Grading Schema		A (93+)	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)

The student work in this course is in full compliance with the federal definition of a four credit hour course. Please see the Lafayette College Compliance webpage (http://registrar.lafayette.edu/additional-resources/cep-course-proposal/) for the full policy and practice statement.

Course syllabus, ver. 1.0 (27August2024)

	Tuesday	**Thursday**	**Misc.**
`Week 1` *Introduction*	Aug 27	Aug 29 **Read**: Price	**Due** Sunday (9/1): HW#1
`Week 2` *how to talk about nature*	Sept 3 **Read:** Knobloch	Sept 5 **Read:** Pollan; Owen	**Watch:** *Manu'f Landscapes—response **due** Tues., 9/10*
`Week 3` *how to talk about tech*	Sept 10 **Read:** Marx; Matthewman	Sept 12	
`Week 4` *Tech revealing nature*	Sept 17 **Read:** Heidegger; Guide to Heidegger	Sept 19 **Screening**: *Rivers and Tides*, 7pm	**Due** Sunday (9/22): Essay #1 **Due**: *R & T response, 9/24*
`Week 5` *T controlling N*	Sept 24 **Read**: Frazier; Nguyen	Sept 26 **Read:** Porter; Scott	
`Week 6`	Oct 1 **Read**: Cronon; Solnit	Oct 3 **Read**: Steinberg; McPhee	**Watch**: *Shored Up— response **due** Thurs. (10/10)*
`Week 7` *T mediating N*	Oct 8—*Fall Break* [no class]	Oct 10 …cont. Steinberg and McPhee	**Due** Weds (10/16): Essay #2
`Week 8`	Oct 15 **Read**: Meinig; Price; Howard	Oct 17 **Read:** Barnett; Ackerman; Hockney	**Due** Sunday (10/20): HW#2
`Week 9` *global scale*	Oct 22 **Read**: Cullather	Oct 24 **Read**: Cullather	**Watch:** *Tomorrow, response **due** Tues (10/29)*
`Week 10`	Oct 29 Cullather + project Intro	Oct 31 **Read:** Turney	
`Week 11` *Sustaining Tech & Nature*	Nov 5 **Read:** Frazier	Nov 7 Project updates	
`Week 12`	Nov 12 **Read:** Eakin	Nov 14 Project work	**Watch**: *2040, response **due** Tues. (11/19)*
`Week 13`	Nov 19 tbd	Nov 21 tbd	
`Week 14`	Nov 26 Project work	Nov 28—Thanksgiving Break [no class]	
`Week 15`	Dec 3 Concluding material	Dec 5 Closing lecture	

A DRAFT LIST OF COURSE MATERIALS

Readings

On nature

1.   Jennifer Price, "A Brief Natural History of the Plastic Pink Flamingo," from Chapter 4 of *Flight Maps* (Basic Books, 1999)
2.   Frieda Knobloch, "The Idea of Nature," from the *Encyclopedia of American Studies*
3.   Michael Pollan, "The Idea of a Garden," Chapter 10 in *Second Nature* (Dell Publishing, 1991)
4.   David Owen, "Green Manhattan" *The New Yorker*
     Recommended: Oxford English Dictionary: entries on "Nature" and "Natural"
     Recommended: Raymond Williams, on "Nature"
     Recommended: Kate Soper, "Nature/'nature'"

On technology

5.   Leo Marx, "Technology: The Emergence of a Hazardous Concept," *T&C* (2010)
6.   Steve Matthewman, *Technology and Social Theory* (Palgrave Macmillan, 2011), Chapter 1
     Recommended: David Nye, "Technology" from the *Encyclopedia of American Studies*
     Recommended: Edgerton, introduction to *The Shock of the Old*
     Recommended: OED entries on "Technology," "Artifact," "Artifice," "Artificial"
     Recommended: Ronald Kline, on Technology and Applied Science (1880-1945)
     Recommended: Eric Shatzberg, Technik comes to America (before 1930)
     Recommended: Morozov, "e-Salvation" (review of Kelly) at *The New Republic*

Technologies reveal nature

7.   Martin Heidegger, "The Question Concerning Technology," abridged (1954)
8.   Guide to Heidegger's "The Question Concerning Technology," excerpted from David Waddington, "A Field Guide to Heidegger: Understanding 'The Question Concerning Technology'," *Educational Philosophy and Theory,* 37/4 (2005): 567-583 and John Zuern http://www.english.hawaii.edu/criticalink/heidegger/index.html (1999)
9.   Ian Frazier, "March of the Strandbeests," *The New Yorker* (Sept. 5, 2011): 56-60
     Recommended: Harry Collins and Trevor Pinch, "A Window On the Universe: The Non-Detection of Gravitational Waves," Chapter 5 from *The Golem* (Cambridge University Press, 1993)
     Recommended: Peter-Paul Verbeek, Chapter 3 from *What Things Do* (2005)
     Recommended: Bruno Latour, "Circulating Reference: Sampling the Soil in the Amazon Forest," from *Pandora's Hope: Essays on the Reality of Science Studies* (Harvard University Press, 1999), pp. 24-79
     Recommended: Wyatt Galusky, "On Consideration of The Remainder," from scienceblogs.com/worldsfair (Seed Media Group, 2007)

Technologies control nature

10. Ted Porter, "Standardizing Measures," from Chapter 1: A World of Artifice, in *Trust in Numbers* (Princeton University Press, 1995), 22-29
11. James Scott, "Chapter 1: Nature and Space" and "Chapter 8: Taming Nature: An Agriculture of Legibility and Simplicity," from *Seeing Like a State* (Yale University Press, 1998)
12. William Cronon, "Artificial Corridors and Railroad Time," from *Nature's Metropolis: Chicago and the Great West* (W.W. Norton, 1992), 63-81
13. Ted Steinberg, "Cloudbusting in Fulton County," Chapter 4 from *Slide Mountain, Or the Folly of Owning Nature* (University of California Press, 1995)
14. John McPhee, "Atchafalaya," from *The Control of Nature* (FSG, 1989)

Recommended: Rebecca Solnit, "Annihilating Space and Time" and "Stopping Time," from *River of Shadows* (Penguin Books, 2003), 1-24 and 177-206
Recommended: Martin Melosi, "City Wastes," excerpted from "Hazardous Waste and Environmental Liability: An Historical Perspective," *Houston Law Review* 25(1988): 741-753
Recommended: Lawrence Weschler, "Trees, Neurons, Networks," in *Everything that Rises: A Book of Convergences* (McSweeney's, 2006), 199-213

Technologies mediate our interactions with nature

15. D. W. Meinig, "The Beholding Eye: 10 Versions of the Same Scene," in *The Interpretation of Ordinary Landscapes: Geographical Essays*, edited by D. W. Meinig and John Brinckerhoff Jackson (Oxford University Press, 1979)
16. Rhonda Howard, "Framing the Landscape"
17. Diane Ackerman, "Nature on TV," *New York Times*
18. Martin Gayford, "The Mind's Eye: David Hockney's New Work," *Technology Review* Sept/Oct 2011
    Recommended: Gabriel Barnett, "Drive-by Viewing," T*echnology and Culture* 45.1 (2004) 30-54
    Recommended: Richard White, *The Organic Machine* (1995), Chapter 1

Technologies and nature at the global scale: agricultural biotechnology, e.g.

19. Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Cambridge, MA: Harvard University Press, 2010)
    Recommended: Jennifer Teisch, *Engineering Nature: Water, Development & the Global Spread of American Environmental Expertise* (Chapel Hill: University of North Carolina Press, 2011)

Select films

Manufactured Landscapes: http://www.mongrelmedia.com/films/ManufacturedLandscapes.html: Photographer Edward Burtynsky travels the world observing changes in landscapes due to industrial work and manufacturing.
Das Rad: http://www.dasrad.com/ and http://video.google.com/videoplay?docid=-2966542393735208484
Rivers and Tides: http://www.imdb.com/title/tt0307385/: Portrait of Andy Goldsworthy, an artist whose specialty is ephemeral sculptures made from elements of nature.
Shored Up: https://www.youtube.com/watch?v=T9ztsv8rc6c
No Impact Man: https://vimeo.com/227815732
Tomorrow: https://www.tomorrow-documentary.com/
King Corn: http://kingcorn.net/: Documentary about growing and tracing one acre of corn from Iowa to its point of consumption
Truck Farm: http://www.truckfarm.org/: Documentary that "tells the story of a new generation of quirky urban farmers."
Biggest Little Farm: https://www.biggestlittlefarmmovie.com/: Documentary that "chronicles the eight-year quest of John and Molly Chester as they trade city living for 200 acres of barren farmland and a dream to harvest in harmony with nature"
Baraka: http://www.imdb.com/title/tt0103767/: Nonverbal film within which "cameras show us the world, with an emphasis not on 'where,' but on 'what's there.'"
Dust, by Hartmut Bitomsky
Over Your Cities Grass Will Grow, by Sophie Fiennes
Cave of Forgotten Dreams, by Werner Herzog
Urbanized, by Gary Hustwit
List of food and farming films at the LaFarm blog: http://sites.lafayette.edu/lafarmblog/resources/sustainable-food-and-agriculure-films/