

HSTR208RH: SCIENCE, ENVIRONMENT, TECHNOLOGY, and SOCIETY
Montana State University, Spring 2012
Joshua Howe

Coordinates:

Class Schedule: Thursdays, 3:10-6:00pm, Wilson Hall 1-128

Email: jhowe@montana.edu

Office Hours: 2-163 Wilson Hall
 Department of History and Philosophy
 Tuesday and Thursday, 1:30-3:00pm
 Or by appointment

Course Description:

This research seminar will focus on the relationships between science, technology, and the environment in shaping 20th Century American society. Our weekly meetings will begin as a mixture of lecture and discussion as we explore topics in the history of American science, including the advent of atomic energy, the space race, the link between tobacco and cancer, and the ongoing discussion about anthropogenic climate change. Throughout the semester, we will supplement our discussions with a series of research workshops designed to help students gain mastery over the methods of historical research as they design and execute a research project in the history of science, technology, and environment of their own. Ultimately, the objective of the course is not only to familiarize students with some of the key issues at the nexus of environmental history and science and technology studies in the 20th century; it is to help students develop the skills of rigorous historical research and critical writing required of a successful SETS major.

Required Texts:

David Noble, *The Religion of Technology*

James Lawrence Powell, *Dead Pool*

Naomi Oreskes and Erik M. Conway, *Merchants of Doubt*

Christopher Tuomey, *Conjuring Science*

Richard White, *The Organic Machine*

Assignments and Evaluation:

Students in this course will be evaluated based on 3 major course components: 1) active participation, as measured by: attendance, discussion participation, two short reading response assignments, and up to three reading quizzes; 2) Formative written work related to your final research project, including a series of short research assignments, a research proposal and presentation, and participation in research and writing workshops; and 3) a final, 12-15 page historical research paper based on a combination of original primary source research and secondary source reading on the topic of your choice, along with a 7-10 minute presentation to your peers. Each of these components, 1-3, will be weighted equally.

Discussion:

As a seminar, this course is built primarily around discussion. I envision a community of peers freely discussing, questioning, challenging, and learning from both the assigned materials and from each other. During these conversations, I hope that each student will find opportunities to give and take in roughly equal measures. I also encourage all of you to have fun. Above all, I EXPECT AND REQUIRE that students treat each other with kindness and respect, regardless of differences of opinion or divergences in views.

Because this course lives and dies by the active participation of its students, a large portion of your final grade depends upon your attendance at and participation in class discussion. Discussion grades are not scientific, but success in discussion has a few relatively simple components.

1. **COME TO CLASS.** There is no maximum number of days you can miss and no points-per-day schedule for missing class. You can't participate if you don't show up...so show up. Period.
2. **DO THE READING.** Attendance is mandatory; so is preparation. It's awfully difficult to have a good discussion on a subject if you don't know anything about it. Do the reading, and you'll know what we're talking about.
 - a. **READING QUIZZES:** To give you some added incentive to read carefully and thoughtfully, I will administer 3 short, unannounced, in-class reading quizzes over the course of the semester. The quizzes will not be difficult...if you have done the reading. So do the reading.
 - b. **READING RESPONSES:** In order to help you organize your thoughts before class and to help you hone your skills of analytical writing, I ask that you complete 2 short reading response exercises during the semester. Each reading response should be between 150 and 300 words; in it, you should clearly and concisely identify the author's intended project, articulate his or her argument, and explain how the author goes about using evidence to support that argument. We will compose a sample response as a group during the second week of class.
3. **LISTEN, ASK QUESTIONS, and SPEAK UP.** You are not obliged to speak for the sake of speaking. You can contribute to the class not only by making insightful, intelligent comments, but also by asking good questions and even by listening carefully. When you DO have something to say, though, speak up!

Formative Written Work

This class is intended to provide a forum for learning how to conduct historical research and write an academic paper. While the final product is important, so too is the learning process. The "formative written work" for this course consists of four main assignments, plus your active participation in all research workshop activities.

1. **SOURCES EXERCISE:** The sources exercise is designed to help you identify the differences between primary and secondary sources and to judge a source's reliability, purpose, and value. First, you will be asked to look at four or five examples of source materials and be prepared to discuss these materials in class. For the following class, you will pick a topic and then find examples of:

- a. A published primary source
- b. An originally unpublished primary source
- c. A reliable secondary source
- d. An unreliable or questionable secondary source
- e. A source that can be read as either primary or secondary

The sources exercise is a workshop exercise; please submit copies of your sources, along with a brief (2-4 sentence) description of how each source could be valuable, and what liabilities it has, to your group (and me) via email no later than Wednesday at noon. Please also bring hard copies to class on Thursday.

2. **RESEARCH PROPOSAL:** By mid-way through the course, you should have come up with a topic and research question for your final paper. The research proposal is an opportunity to articulate that question and explain how you plan to go about answering it. In 2-3 pages, the formal proposal should 1) introduce the topic, 2) articulate the research question, 3) identify and discuss the sources you intend to use in your investigation, and 4) present a preliminary discussion of why you think this research is important. The research proposal should be cleanly and carefully written using Chicago Manual of Style footnotes. It should also include 5) a bibliography.
3. **PROPOSAL PRESENTATION:** In addition to this written presentation, you will also be asked to present your proposal to the class. Presentations should run about 5 minutes, and include an overview of the project, an articulation of the research question, and a discussion of sources. Powerpoints and other visuals are welcome but not required.
4. **PRÉCIS:** The *précis* consists of a short (1-2 page) research statement that introduces your project and articulates your main argument, a brief (2-3 page) review of the relevant secondary source literature on your topic, and an updated bibliography. A well-written and well-researched *précis* should work as a rough outline for your final paper, and many students will actually use parts of the *précis*—especially the secondary source literature review—in their final papers.

Final Project:

Your final project will consist of a well-written 12-15 page research paper based on original primary source research and secondary source reading on the historical topic of your choice. The project will also include polished and entertaining 7-10 minute in-class presentation, to be delivered on the final day of class. Papers should be written clearly and should be free of typographical errors and mistakes of spelling and grammar. They should include footnotes *and* a full bibliography, both using the Chicago Manual of Style format. Projects will be evaluated on the quality of the writing, the depth of the research, and the creativity and originality of the project as a whole.

Week 1 (1/12): Introduction

Lecture: Introduction, Syllabus, Expectations, and Objectives

Discussion: Defining our Terms

Research and Writing:

1. Intro to Academic Research
2. Developing a Research Questions (Part 1)

Week 2 (1/19): Knowing Nature Through Work

Discussion: Knowing Nature Through Work

1. Richard White, *The Organic Machine*
2. White, "Are You an Environmentalist or Do You Work for a Living?" (Library E-Reserve)

Research and Writing:

1. Active language and strong verbs
2. Modeling the 5-sentence summary

Week 3 (1/26): Hybrid Causation and Unintended Consequences

Discussion: Hybrid Causation and the Price of Modernity

1. Brett Walker, "Intro" and "Engineering Pain in the Jinzu River Basin," in *Toxic Archipelago* (Library E-Reserve)
 - a. Workshop 5-sentence summaries (due Wednesday)

Research and Writing: Thinking About Sources

1. Sources exercise (reading TBA)
2. JSTOR, Lexus-Nexus Congressional, and Pro-Quest Historical Newspapers

Week 4 (2/2): Science, Technology, and Religion

Discussion: Why do we love technology?

1. From David Noble, *The Religion of Technology* (Assignment TBD)
2. David Nye, "The Consumer's Sublime," in *American Technological Sublime* (pg. 281-296) (On Library E-Reserve)

Research and Writing: Sources, Part 2

1. Sources Assignment Due
2. Library Visit

Week 5 (2/9): The Manhattan Project and the Atomic Age

Lecture: The Manhattan Project

1. Manhattan Project Documentary
2. Mini-Lecture: Science, Secrecy, Security, and the Bomb

Discussion: Science and the State

1. Joseph Manzione, "'Amusing and Amazing and Practical and Military': The Legacy of Scientific Internationalism in American Foreign Policy," *Diplomatic History* (Winter, 2000), pg. 21-55.
2. Gregg Herken, "In the Service of the State: Science and the Cold War," *Diplomatic History* (Winter, 2000), pg. 107-115.
3. Excerpts from *Stand by and Make Do: Women of Wartime Los Alamos* (On E-Reserve)

Week 6 (2/16): Science in American Popular Culture

Lecture: Albert Einstein

Discussion: What Makes a Scientist?

1. Christopher Tuomey, *Conjuring Science*

Research and Writing: Research Questions and the Research Proposal

1. Research Questions and the Proposal
2. 5-sentence summary workshop on *Conjuring Science*

Week 7 (2/23): Tobacco, Cancer, and Scientific Doubt

Discussion: Causation and Doubt in the Case of Tobacco

1. Oreskes and Conway, “Introduction,” and “Doubt is our Product,” in *Merchants of Doubt*
2. Robert Proctor, “Doubt is our Product” and “Trade Association Science” in *Cancer Wars*.

Research and Writing: “Limited Source” Archives

1. Mini-Lecture: A Brief History of American Spirit Cigarettes
 - a. Sources and how we use them
2. Investigating the “Limited Source” Option

Week 8 (3/1): Science and the Global Environment (Part 1)

Lecture: Intro to Climate Change

1. Documentary: *An Inconvenient Truth*
2. Lecture: Historical Perspectives on Climate Change (a history of science)

Research and Writing: Proposal and Presentation Examples

Week 9 (3/8): Project Proposals

Research and Writing: Project Proposals

1. Presentations
2. Proposals Workshop

Week 10 (3/15): Spring Break (No Class)

Week 11 (3/22): Science and the Global Environment (Part 2)

Lecture: Global Environmental Governance

Discussion: Skeptics and Deniers

1. Oreskes and Conway, “Sowing the Seeds of Doubt,” “Constructing a Counternarrative,” and “The Denial of Global Warming.”

Week 12 (3/29): No Class

1. *Précis* due to groups (and me) by Thursday at 11:59pm.

Week 13 (4/5): Water: A SETS Case Study

Mini-Lecture: Dan Zizzamia, “The Great Interior Seaway”

Discussion: The Intractable Problem of Water

1. James Lawrence Powell, *Dead Pool*
 2. 5-sentence summaries on *Dead Pool* due in class
- Research and Writing: *Précis* workshop

Week 14 (4/12): Research Meetings

Week 15 (4/19): Research Meetings

Week 16 (4/26): Final Presentations

****Final Projects Due Friday, April 27th at 5:00pm****