Course Introduction:

This course aims to provide an introduction to some of the major issues and themes in the history of science, medicine, and technology.

After a pair of introductory weeks on the “big picture” in the history and historiography of science, the rest of the course will go through a series of exemplars of influential and prize-winning works related to a general theme that runs through much work in the field today, what I’ll call “the production and uses of natural knowledge: sites, communities, exchanges, and meanings.” Or, more briefly, “natural knowledge in context and in motion.”

Assignments:

Each week there will be a common reading that all of us will read. There also is a set of supplemental readings listed for each week. Three times during the semester, you will read one of the supplemental readings and report on it to the class.

For each common reading, you will write a short summary and response paper. A summary and response paper for this course should consist of a one paragraph summary of the central argument of the reading, a second paragraph relating it to other works you have read, and a third paragraph of your own commentary and questions in response to the reading. There is no length limit on your commentary, but the summary paragraph really needs to be one good paragraph (4-6 sentences, say) in length. If there are multiple common readings (e.g. a bunch of articles), you should write one summary and response paper, only it should have a one-paragraph summary for each reading, though it only needs one paragraph (total) discussing them in relation to other works and only one paragraph (total) of commentary and questions. You are free to write more commentary and questions, but that is not required.

When you are presenting a supplemental reading, you will write an Isis-style book review (700-800 words, max) of that reading. You will bring copies of this review to class to circulate to the other students as well as to me. (If you prefer to email your reviews, that’s fine, just make sure you do so by noon Tuesday so that people have time to print them out before class.) In class, you will read your review and take questions from the class about the reading. In preparing for the discussion, you should be ready to compare and contrast that reading with the common core reading.

In addition to the common readings and supplemental reading presentations, there will be short professional development assignments on several weeks. These range from identifying and describing journals in the field to comparing survey syllabi to researching grant opportunities. These PDAs are described in greater detail below.

The final assignment for the course is to write a (slightly modified) NSF-style grant proposal. Ideally, this proposal should be related to the project you hope to undertake for your MA thesis. (Generally speaking, these proposals are 15 pages or less in length, plus bibliography.) We’ll discuss the specifics of this assignment as we go. If you prefer, you may instead present a conference paper. This paper should fit the typical format for papers at HSS—you have 20 minutes, plus five to ten minutes for Q and A afterwards. The paper should be the result of original research. If you choose this option, you will present this paper orally in one of the last two weeks of class. If you choose the proposal option, it will be discussed in class in one of the last two weeks of class.

You will be graded on the quality of your participation in discussion (20%) as well as on your response papers (20%), reviews on supplemental readings (20%), PDAs (10%), and final proposal/conference paper presentation (30%).
Course Schedule

Week 1: August 19. Course Introduction

Week 2: August 26. Surveys—the Big Picture.

**Common Readings:**

**Supplemental Reading Options:**
- Thomas Misa, *Leonardo to the Internet*
- McClellan and Dorn, *Science and Technology in World History* (2nd ed)
- Roy Porter, *The Greatest Benefit to Mankind*

PDA: Electronic Research Tools. Find three electronic resources you might use in your research. Describe each resource briefly, noting what it covers/ provides and how one uses it.

Week 3: September 2. Constructivism and the Historiographic Big Picture

**Common Readings:**

**Supplemental Reading Options:**
- Sergio Sismondo, ed., special section of *Social Studies of Science*, June 2012, on 50 years since Kuhn's *Structure* and 25 since Latour's *Science in Action*.

**Other Relevant Readings of Interest:**
- John Pickstone, *Ways of Knowing*.
- Bruno Latour, *Reassembling the Social*.
- Andy Pickering, *The Mangle of Practice*.
- Thomas Söderqvist, *The Historiography of Contemporary Science and Technology*.
- Peter Novick, *That Noble Dream*.

PDA: The survey. In preparation for class, talk to any professor in the department (other than me) about his/her approach to teaching a history of science survey course. Ask them what their goals for such a course are, how they bound or define the subject area for the course, why they organize it the way they do, what the central theme/narrative for the course is, and what their most successful assignments have been. Remember, you are asking these questions to learn from successful instructors! Remember also
that they are busy folks, so make an appointment! Finally, bring in a copy of the syllabus for the undergraduate survey section you are attending as part of 5990.


Common Readings:

Supplemental Reading Options:
- Robert Kohler, *Lords of the Fly*
- Steven Shapin and Simon Shaffer, *Leviathan and the Air Pump*
- Emily Thompson, *The Soundscape of Modernity*
- Rebecca Lemov, *World as Laboratory*
- Bruno Latour, first half of *The Pasteurization of France*

PDA: the lecture. How to plan and give a lecture. During the previous week you should sit in on a lecture given by a faculty member of your choice, or to a colloquium presentation, and pay attention to the way it is organized and presented. Come prepared to discuss how you might organize and present a lecture.

Week 5: September 16. Communities of Knowledge.

Common Reading:

Supplemental Reading Options:
- Louis Menand, *The Metaphysical Club*
- Susan Faye Cannon, *Science in Culture*
- Pamela Long, *Openness, Secrecy, Authorship*
- Ron Doel, *Solar System Astronomy*
- Daniel Kevles, *The Physicists*

PDA: Journals. Select two journals related to the history of science, medicine, or technology. (e.g. *Isis,* *Social Studies of Science,* BJHS, *Annals of the History of Science,* *History of Science,* *Technology and Culture,* *History and Technology,* *Minerva,* *Bulletin of the History of Medicine,* HSNS, *History of Psychology,* HOPE, JHBS, JHB, *Journal of the History of Ideas,* etc. You'll find quite a selection in the journal room or online!) Spend an hour or two looking through some recent issues of each of the two journals. What do you notice about them? How many articles per issue are there? How long are they? Are there other things in the issue besides research articles? Are the journals similar in the topics and styles of the articles? The periods covered? See if you can find a general statement page describing the journal's sense of mission.
Week 6: September 23. The State and the Production of Knowledge

Common Reading:

Supplemental Reading Options:
- Pamela Smith, *The Business of Alchemy*
- Bruce T. Moran, *Patronage and Institutions: Science, Technology, and Medicine at the European Court*
- Mary Terrall, *The Man Who Flattened the Earth: Maupertuis and the Sciences in the Enlightenment*
- Londa Schiebinger, *Plants and Empire*
- Jorge Canizares-Esguerra, *Nature, Empire, and Nation*
- James Delbourgo, ed., *Science and Empire in the Atlantic World*
- Thomas Broman, *The Transformation of German Academic Medicine, 1750-1820*
- C.C. Gillispie, *Science and Polity in France at the End of the Old Regime*
- Ken Alder, *Engineering the Revolution*
- Stuart Leslie, *The Cold War and American Science*
- James Scott, *Seeing Like a State*
- David Cahan, *An Institute for an Empire*
- Solovey and Cravens, eds., *Cold War Social Science*
- Gabrielle Hecht, *The Radiance of France*
- Peter Galison and Bruce Hevly, *Big Science*
- Atsushi Akera, *Calculating a Natural World*
- Jeff Hughes, *The Manhattan Project*
- Osiris, 2005, *Politics and Science in Wartime*
- Osiris, 2002, *Science and Civil Society*
- Paul Forman, "Behind Quantum Electronics," and "Inventing the Maser"

Week 7. September 30. Exchanges/The Circulation of Knowledge and Practice

Common Reading:
- Harold Cook, *Matters of Exchange*

Supplemental Reading Options:
- Pamela Smith, *Merchants and Marvels*
- Daniel Rodgers, *Atlantic Crossings*
- Osiris, 2006, *Global Power Knowledge*
- Osiris, 2000, *Nature and Empire*
- Richard Drayton, *Nature's Government*
- Nicholas Jardine, *Cultures of Natural History*
- David Livingstone, *Putting Science in its Place*
- Miller and Reill, *Visions of Empire*
- Michael Adas, *Machines as the Measure of Men*
Week 8: October 7. Gendered Knowledge and Practice

**Common Readings:**

**Supplemental Reading Options:**
- Donna Haraway, *Primate Visions*
- *Osiris*, 1997, *Women, Gender, and Science*
- Janet Kourany, ed., *Gender and Science*
- Londa Schiebinger, *Nature's Body*
- Emily Martin, *The Woman in the Body*
- Joan Cadden, *The Meaning of Sex Differences in the Middle Ages*
- Margaret Rossiter, *Women Scientists in America*
- Joan Wallach Scott, *Gender and the Politics of History*

PDA: Teaching. How to lead a discussion. During the week you should observe someone leading a discussion and see what you can learn from watching them.

Week 9. October 14. Racialized Knowledge and Practice

**Common Readings:**

**Supplemental Reading Options:**
- Nancy Leys Stepan, *The Idea of Race*
- Kenneth Manning, *Black Apollo*
- Angela Lakhete, *Inventing the Cotton Gin*
- Judith Carney, *Black Rice*
- George Stocking, *Race, Culture, and Evolution*

PDA: Conferences. Find 3 conferences relevant to your interests and describe them—how big are they, how are they organized, how often are they held, what is the typical format, etc.

Week 10. October 21. Representation, Knowledge, and Practice

**Common Readings:**
- David Kaiser, *Drawing Theories Apart*
Supplemental Reading Options:
  9. George Lakoff and Mark Johnson, *Metaphors We Live By*, chapters 1-12, pp. 3-60.
  10. Mary Morgan, *The World in the Model*
  11. Theodore Porter, *Trust in Numbers*
  12. Hunter Heyck, "A Model Science?", chapter 6 from *The Age of System*

PDA: Images. Find an image related to science or technology and come prepared to discuss it.

**Week 11. October 28. Everyday Knowledge and Practice**

**Common Readings:**
  1. David Arnold, *Everyday Technologies*

**Supplemental Readings:**
  1. Dagmar Schäfer, *The Crafting of the Ten Thousand Things*
  7. Gregg Mitman, "When Nature is the Zoo" in *Osiris*, 1996.

**Week 12. November 4. Natural Knowledge and its Cultural Meanings**

**Common Readings:**
  1. Richard Holmes, *Age of Wonder*

**Supplemental Reading Options:**
  1. Jennifer Alexander, *The Mantra of Efficiency*
  2. Anson Rabinbach, *Human Motor*
  4. Piers Hale, *Political Descent*
  5. Edward Larson, *Summer for the Gods*
Edward Grant, *Science and Religion, 400 B.C. to 1550 A.D.*
Margaret Jacob, *The Cultural Meaning of the Scientific Revolution*

PDA: Reviews. Find three reviews of one of the books you’ve read for this course so far. Come prepared to discuss them, including which you thought was best and why.

**Week 13. November 11. Technology and its Cultural Meanings**

**Common Readings:**
- John Tresch, *The Romantic Machine*

**Supplemental Reading Options:**
- David Nye, *America as Second Creation*
- David Nye, *Electrifying America*
- Jeffrey Meikle, *American Plastic*
- Bernhard Rieger, *The People’s Car*
- Bernard Rieger, *Technology and the Culture of Modernity*
- Regina Blaszczyk, *The Color Revolution*
- Ruth Oldenziel and Karin Zachmann, *Cold War Kitchen*
- Molly Berger, *Hotel Dreams: luxury, technology, and urban ambition in America*
- Fred Turner, *From Counterculture to Cyberculture*

**Week 14: November 18. Exchanges of Knowledge—Print, Popular Knowledge, and Politics**

**Common Reading:**
- John Secord, *Victorian Sensation*

**Supplemental Reading Options:**
- Aileen Fyfe, *Steam-Powered Knowledge*
- Elizabeth Eisenstein, *The Printing Revolution in Early Modern Europe*
- Dagmar Schäfer, *The Crafting of the Ten Thousand Things*
- Paul Starr, *The Creation of the Media*

PDA: Popular science. Visit a science museum, zoo, or natural history museum, or watch a popular history of science-related show (e.g., On the Discovery Channel or History Channel) and come prepared to discuss how science/medicine/technology is popularized today.


**Common Reading:**
- Gyan Prakash, *Another Reason*

**Supplemental Reading Options:**
- David Nye, *America as Second Creation*
- Thomas Hughes, *American Genesis*
- Sara Pritchard, *Confluence*
- Ted Steinberg, *Down to Earth*
- Dolly Jorgensen, ed, *New Natures*
- William Cronon, *Nature’s Metropolis*
- Gabrielle Hecht, *Radiance of France*
- Asif Siddiqi, *The Red Rocket’s Glare*
• Howard McCurdy, *Space and the American Imagination*
• *Osiris*, 2009, *Science and National Identity*

**Week 16. December 2. The Global and the Local**

**Common Reading:**

• Gabrielle Hecht, *Being Nuclear*

**Supplemental Reading Options:**

• *Osiris*, 2006, *Global Power Knowledge*
• Gabrielle Hecht, ed., *Entangled Geographies: empire and technopolitics in the Global Cold War*
• Manuel Castells, *The Rise of the Network Society*
• David Harvey, *The Condition of Postmodernity*
• Saski Sassen, *The Global City*
• Paul Edwards, *A Vast Machine*