Course Introduction:

This course aims to provide an introduction to some of the major issues in the history of science, medicine, and technology and to help students with practical problems in their professional development. Each class meeting will have two parts. Generally, the first two hours will focus on historiography, and the last hour will focus on professional development.

After an introductory week on constructivism and the big picture in the history of science, the historiographical portion of the course will be divided into five thematic units: 1) science in culture; 2) patrons and institutions; 3) scientific communities; 4) places and practices; and 5) representations. Each of these units could be the subject of an entire course; the aim is not to provide comprehensive coverage so much as an introduction to issues and approaches.

Assignments:

Each week there will be a common core reading that all of us will read. There also is a set of supplemental readings for each week. Each week at least one of you will read one of the supplemental readings and report on it to the class. Sometimes multiple people will present on different supplemental readings. For each common core reading, you will write a short summary and response paper. If there are multiple common core readings, you will write multiple response papers. A summary and response paper for this course should consist of a one paragraph summary of the central argument of the reading, plus a paragraph or more of your own commentary in response to the reading. There is no length limit on your commentary, but the summary really needs to be one good paragraph (3-6 sentences, say) in length.

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. You each will do five supplemental reading presentations this semester.

In addition to the common readings and supplemental reading presentations, there will be a short professional development assignment each week. 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 presenting 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. You will present this paper 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 conference paper presentation (30%). As a general rule, graduate students are expected to perform at an "A" level in all of these areas by the end of the semester.
Course Schedule

Week 1: August 25. Course Introduction

Week 2: September 1. Constructivism and the Big Picture

Common Readings:

Supplemental Readings:
- John Pickstone, *Ways of Knowing*
- Osiris, 1995, *Constructing Knowledge in the History of Science*
- Hughes, Bijker, and Pinch, *The Social Construction of Technical Systems*
- Bruno Latour, *Reassembling the Social*
- Andy Pickering, *The Mangle of Practice*

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.

Week 3: September 8. Science in Culture I: Science and Religion

Common Reading:
- Osiris, 2001, *Science in Theistic Contexts*. (Read the whole thing and write your summary and response essays on the four articles you found most interesting.)

Supplemental Readings:
- Richard Olson, *Science and Religion, 1450-1900: Copernicus to Darwin*
- Edward Larson, *Summer for the Gods*
- Sachiko Kusukawa, *The Transformation of Natural Philosophy*
- C.C. Gillispie, *Genesis and Geology*
- John Greene, *The Death of Adam*
- Lindberg and Numbers, *God and Nature*
- John Hedley Brooke, *Science and Religion*
- Edward Grant, *Science and Religion, 400 B.C. To 1550 A.D.*
- Ian Barbour, *Religion and Science*

PDA: Journals. Select two journals related to the history of science, medicine, or technology. (e.g. *Ius, 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!) 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 4: September 15. Science in Culture II: Science and Politics (class ends early for Liba Taub talk)

Common Reading:

Supplemental Readings:
- *Osiris*, 2009, *Science and National Identity*
- *Osiris*, 2006, *Global Power Knowledge*
- *Osiris*, 2005, *Politics and Science in Wartime*
- Shapin and Shaffer, *Leviathan and the Air Pump*
- Sonja Amadae, *Rationalizing Capitalist Democracy*
- Daniel Rodgers, *Atlantic Crossings*
- Hunter Heyck, *Herbert A. Simon*
- Paul Forman, "Weimar Culture"
- Paul Forman, "Behind Quantum Electronics," and "Inventing the Maser"
- Stuart Leslie, *The Cold War and American Science*
- C.C. Gillispie, *Science and Polity in France at the End of the Old Regime*
- Ken Alder, *Engineering the 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 5: September 22. Science in Culture III: Science, Race, and Gender.

Common Readings:

Supplemental Readings (race):
- Michael Adas, *Machines as the Measure of Men*
- Kenneth Manning, *Black Apollo*
- Angela Lakwete, *Inventing the Cotton Gin*
- George Stocking, *Race, Culture, and Evolution*

Supplemental Readings (gender):
- 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 6: September 29. Patrons and Institutions I: The Court.

Common Reading:

Supplemental Readings:
- Mario Biagioli, *Galileo, Courtier*
- Paula Findlen, *Possessing Nature*

PDA: Grants. Search for grants and fellowships that might support your research someday. Turn in a list of the 3 most promising, with a short description of what the application requires.

Week 7: October 6. Patrons and Institutions II: States, Academies, and Empires.

Common Reading:

Supplemental Readings:
- *Osiris*, 2000, *Nature and Empire*
- *Osiris*, 2006, *Global Power Knowledge*
- Richard Drayton, *Nature's Government*
- David Cahan, *An Institute for an Empire*
- Londa Schiebinger, *Plants and Empire*
- Jorge Canizares-Esguerra, *Nature, Empire, and Nation*
- James Delbourgo, ed., *Science and Empire in the Atlantic World*
- Pamela Smith, *Merchants and Marvels*
- Nicholas Jardine, *Culture of Natural History*
- David Livingstone, *Putting Science in its Place*
- Miller and Reill, *Visions of Empire*
- Harold Cook, *Matters of Exchange*
- Thomas Broman, *The Transformation of German Academic Medicine, 1750-1820*

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 paper format, etc.

Week 8: October 13. Patrons and Institutions III: Postwar Science and the State.

Common Readings:

Supplemental Readings:
- Peter Galison and Bruce Hevly, *Big Science*
- Stuart Leslie, *The Cold War and American Science*
- Atsushi Akera, *Calculating a Natural World*
- *Osiris*, *Science After '40*
- Jeff Hughes, *The Manhattan Project*
• Daniel Kevles, "Big Science and Big Politics," *HSPBS*, 1997
• Daniel Kevles, *The Physicists*
• Catherine Westfall, "Rethinking Big Science," * Isis*, 2005.
• Hunter Heyck, *Herbert A. Simon*

PDA: Electronic Research Tools. Find two electronic resources you might use in your research other than JSTOR and the library catalog. Describe each resource briefly, noting what its holdings are and how one uses it.

Week 9: October 20. Sites and Modes of Production I: The Laboratory and the Field.

Common Readings:

Supplemental Readings:
• 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: Interviewing. Contact an OU faculty member who does laboratory research and do a short interview with him or her about his/her work. Your interview should focus on "laboratory life"--all the things that go into experimental work, from getting grants, setting up laboratory space, planning experiments, working alone or with teams, what kind of instruments they use (and how big and or expensive they are) what made their most successful experiment successful, and why they came to do this kind of research in this field.

Week 10: October 27. Sites and Modes of Production II: Instruments.

Common Reading:

Supplemental Readings:
• Osiris*, 1994, *Instruments*
• Nicholas Rasmussen, *Picture Control*
• *History of Science* 2006 special issue on instruments and artisans

PDA: Interviewing, day 2. Contact an OU faculty member who does laboratory research and do a short interview with him or her about his/her work. Your interview should focus on "laboratory life"--all the things that go into experimental work, from getting grants, setting up laboratory space, planning experiments, working alone or with teams, what kind of instruments they use (and how big and or expensive they are) what made their most successful experiment successful, and why they came to do this kind of research in this field.


Common Reading:
Supplemental Readings:

- Louis Menand, *The Metaphysical Club*
- Susan Faye Cannon, *Science in Culture*
- Pamela Smith, *Merchants and Marvels*
- Pamela Long, *Openness, secrecy, authorship*
- Ron Doel, *Solar System Astronomy*
- Many of the readings related to academies and empires fit here as well.

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

Week 12: November 10. Scientific Communities II: Disciplines and Professions.

Common Readings:


Supplemental Readings:

- Atsushi Akera, *Calculating a Natural World*
- Ron Doel, *Solar System Astronomy*
- Mitchell Ash, *Gestalt Psychology in German Culture*, (focus on part up to WWII)
- Daniel Kevles, *The Physicists*
- Andrew Abbott, *The System of Professions* (the rest of the book)
- Brian Balogh, "Re-Organizing the Organizational Synthesis," *Studies in American Political Development* V (Spring): 119-172
- Paul Starr, *The Social Transformation of American Medicine*
- Laurel Thatcher Ulrich, *A Midwife's Tale*

PDA: Teaching--assignments and activities. Draw up an assignment for a class you might teach, and plan an in-class activity for an undergraduate course.


Common Readings:


Supplemental Readings:

- Gregg Mitman, "When Nature is the Zoo" in *Ours*, 1996.
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 Readings:

Supplemental Readings:
- David Kaiser, Drawings Theories Apart

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

Week 15: December 1. Representations II: Mathematization and Objectivity.

Common Readings:

Supplemental Readings:
- None this week. Write your papers!

PDA: Conference paper presentations, part I.


Common Readings:
- George Lakoff and Mark Johnson, Metaphors We Live By, chapters 1-12, pp. 3-60.

Supplemental Readings:
- None this week. Write your papers!

PDA: Conference paper presentations, part II.