Graduate Survey in the History of Modern Science

This course is a graduate-level survey of the history of science in the 19th and 20th centuries, the period which saw the emergence, elaboration, and institutionalization of what we loosely think of as the “modern scientific enterprise”. This course will take seriously its mission as a survey of the history of science during these two pivotal centuries: the goal is to give students the opportunity to explore the dynamics of scientific life during this era from the vantage point of different national contexts, different disciplinary traditions, and different research methods in the history of science. You will gain insight into the social, intellectual, and cultural history of science in this era by considering issues in the history of biology, physics, and other fields, analyzing rhetoric and visual images, and taking up such issues as science and the legal system and science and popular culture.

To give this diverse array of areas and issues some focus, we will be concentrating on book-length treatments and cohesive edited volumes which will allow us to build up a set of comparative episodes in the making of modern science; there will also be accompanying reading that will point to related areas and larger issues. There will be periodic reflection papers designed to help you develop your analytical skills, and a final paper assignment that will have you focus on emphases of your choice for either the 19th or 20th century by discussing current journal literature. NOTE: It is not my policy to grant extensions on assignments or incompletes at the end of the term. Papers are due on the stated due dates.

Required Books:
The Heretic in Darwin's Court: The Life of Alfred Russel Wallace / Ross Slotten (Columbia U Pr, 2006)
Figuring it Out: Science, Gender and Visual Culture / Ann Shteir and Bernard Lightman, eds. (Dartmouth College Pr, 2006)
Appropriating the Weather: Vilhelm Bjerknes and the Construction of a Modern Meteorology / Robert Marc Friedman (Cornell U Pr, 1993)
Landscapes and Labscapes: Exploring the Lab-Field Border in Biology / Robert Kohler (U of Chicago Pr, 2002)
Redeeming Culture: American Religion in an Age of Science / James Gilbert (U of Chicago Pr, 1998)
Recommended Books: If you are new to history of science, the humanities, or the writing of graduate seminar papers, the following texts are recommended as study and writing aids:


**Science and Technology in World History: An Introduction** / James E. McClellan and Harold Dorn (Johns Hopkins U Pr, 1999)

**A Manual for Writers of Term Papers, Theses, and Dissertations**, 6th rev. ed. / Kate L. Turabian (U of Chicago Pr 1996)

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**Schedule of Topics and Reading**

**Week 1**

**8/21**

**Reading**

Entries for “Science,” “Nature,” and “Materialism” in Raymond Williams, *Keywords: A Vocabulary of Culture and Society*, rev. ed. (Oxford U Pr. 1983) / Class Handout

Set of Introductory Images / Class Handout

**Week 2**

**8/28**

**Reading:**


**Week 3**

**9/4**

**Reading:**


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<tr>
<th>Week 4</th>
<th>Victorian Science and its Contexts: The Living World</th>
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<td>9/11</td>
<td>Reading: Slotten, Heretic in Darwin’s Court (through chapter 10)</td>
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<th>Week 5</th>
<th>Victorian Science and Its Contexts: Biology</th>
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<td>9/18</td>
<td>Reading: Slotten, Heretic in Darwin’s Court (finish)</td>
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<th>Week 6</th>
<th>Gender Issues through the Lens of Visual Culture (pre-20thc)</th>
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<tr>
<td>9/25</td>
<td>Reading: Shteir and Lightman, Figuring it Out (parts 1 and 2 for discussion)</td>
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<td></td>
<td>* Isis Focus Section on “Science and Visual Culture” / March 2006, 97(1):75-132</td>
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<td>Response Paper on Figuring it Out Due at Class Meeting</td>
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<th>Week 7</th>
<th>Gender Issues through the Lens of Visual Culture (20thc)</th>
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<td>10/2</td>
<td>Reading: Shteir and Lightman, Figuring it Out (part 3 for discussion)</td>
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<td>* Julie Wosk, Women and the Machine (Johns Hopkins U Pr, 2003) / excerpt</td>
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<td>Reflection Paper on The Science of Energy and The Heretic in Darwin’s Court due on Thursday, 10/4 by 5 p.m. in my office or by email</td>
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<th>Week 8</th>
<th>Presentations on Article Searches, Part 1</th>
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Week 9 10/16
Topics in Science and Society: The Question of Law

Reading: Golan, Laws of Nature, Laws of Men

* Isis Focus Section on “Science and the Law” / June 2007, 98(2):310-350

Response Paper on Laws of Nature Due at Class Meeting

Week 10 10/23
Disciplinary Construction

Reading: Friedman, Appropriating the Weather


Mary Jo Nye, “National Styles? French and English Chemistry in the Nineteenth and Early Twentieth Centuries,” Osiris, 1993, 8:30-49

* Fritz Ringer, “The Social and Institutional Background,” from his The Decline of the German Mandarins: The German Academic Community, 1890-1933 (Harvard U Pr, 1969)

Week 11 10/30
Disciplining Science: In and Out of the Lab

Reading: Kohler, Landscapes and Labscapes


Susan Sheets-Pyenson, “Introduction,” in her Cathedrals of Science: The Development of Colonial Natural History Museums during the Late Nineteenth Century (McGill-Queen’s U Pr, 1988)

Week 12 11/6
Presentations on Article Research, Part 2

Week 13 11/13
Visual Sources: Science on Film in the Post-War Period

Selected Primary Sources for In-Class Viewing and Analysis

Reflection Paper on Appropriating the Weather and Landscapes and Labscapes Due Friday 11/16 by 5 p.m. in my office or by email

Week 14 11/20
Individual Consultations on Term Papers
Assignments:

1. Short Response Paper on *Figuring it Out*. Due Week 6 for class discussion on 9/25 (approx. 4-5 pp., 10%).

2. Reflection Paper comparing and contrasting issues in *The Science of Energy* and *The Heretic in Darwin's Court*. Due Week 7 on Thursday, 10/4, by 5 p.m. at my office or via email (approx. 6-7 pp., 20%).

3. Short Response Paper on *Laws of Nature, Laws of Men*. Due Week 9, on 10/16 (approx. 4-5 pp., 10%).

4. Reflection Paper comparing and contrasting issues in *Appropriating the Weather* and *Landscapes and Labscapes*. Due Week 13, 11/16 (approx. 6-7 pp., 20%).

5. Short Response Paper on *Redeeming Culture*. Due Week 15 for class discussion on 11/27 (approx. 4-5 pp., 10%).

6. Historiographic Term Paper, drawing on current article literature: Final Draft due Exam Week on Thursday, 12/13, in my office by 5 p.m. (12-15 pp., 30%).