This course is a team-taught graduate survey of the history of science, intended to broaden and deepen the content presented in HSCI 3023 (which, in most cases, you will be auditing in conjunction with this graduate course), and to introduce you to advanced historiography that relates to the modern period. You will encounter both classic work in the discipline as well as more recent viewpoints. In conjunction with your auditing of HSCI 3023, the goal for this 5990 supplement is to provide you with a working knowledge of the basic “canon” of topics and historiographical issues in the modern period, and an awareness of the broad array of themes and content that constitute the larger web of connections in thinking about the history of modern science and technology. In reaching this goal you will be better prepared to undertake such tasks as build your own bibliographies for further study and research and be better prepared to serve as a teaching assistant in the undergraduate survey at a later date, due to a fuller knowledge of the historical background and historiography.

Course Mechanics

3023 Component: All students in this 5990 are expected to be directly involved in one of the 3023s being offered this semester, either as an actively auditing student or as the course GTA. The professor for the 3023 you take will specify the exact nature of your obligations to that course, but you should expect, at a minimum, to be required to attend the lectures and discussions and to do the readings. Some faculty may ask you to do weekly homework assignments or to take quizzes and exams as well; some may not.

Weekly 5990 Seminar: For the most part, the course will meet weekly as a seminar (exceptions are noted in the schedule below). Students are expected to turn in a short writing assignment for each week that has assigned reading: Generally, the short assignment will be a book review of approximately 750-900 words on the primary reading for that week (such a review should go beyond summarizing key points and integrate an analytical discussion as well). However, some instructors may instead give you specific instructions on how to structure the short writing assignments, or give you a specific question or questions to focus on. If so, they will forward those instructions to you via email prior to your need to prepare the assignment. As the overall coordinator for the course, Dr. Weldon will oversee this process as well as the general structure – if you have any questions about logistics at any time, feel free to contact him. If you are unclear about the expectations for any particular assignment, please ask the relevant professor.

Grading: Your grade for the course will be determined by all five participating faculty. It will depend upon both your writing assignments and your participation in the weekly discussions, with the writing assignments being weighted more heavily.

Readings: For the required reading, we will seek to place copies of texts owned by OU on reserve; those in the general stacks will be placed on reserve at the Bizzell Circulation Desk, and those owned by the HSCI Collections will be shelved in a place to be determined by Dr. Magruder. If articles are part of the required reading we will place copies on a designated shelf in PHSC if no online access is available. We do this as a convenience for you, and in recognition of the costs of course materials. We do urge you to consider buying course materials as part of your graduate training. Sources such as amazon.com often offer discounted prices for new texts and access to used copies; bookstores such as abe.com, alibris.com, bookfinder.com, and others are also helpful sources for used books. Note: If you are planning on relying on reserve materials for writing your papers, it will be to your benefit to develop time-sharing expectations with the other seminar participants, to prevent any last-minute train wrecks in the days before a paper is due.
Course Schedule

1) Monday, January 23 — Introductory class

Instructor: Dr. Stephen Weldon, Dr. Hunter Heyck, Dr. JoAnn Palmeri, Dr. Katherine Pandora, Dr. Piers Hale, Dr. Suzanne Moon, Dr. Peter Soppelsa

Instructor: Dr. Hunter Heyck

2) Monday, January 30 — The Birth of the Social Sciences

Readings:

3) Monday, February 6 — 20th Century Social Science

Readings:
For this class meeting, you should treat my six articles as if they were chapters in a book and write a 750-900 word review of this “book.”

Instructor: Dr. JoAnn Palmeri

4) Monday, February 13 — Modern Astronomy (I)

For this first meeting, please bring copies of HSCI 3023 syllabi for all classes you have taken, assisted with, or observed (including the current semester).

Readings
We will use the following studies to prompt discussion on the trends, topics and methods in the history of 19th/20th century astronomy. Readings not posted on D2L should be available online.


3. Sign up for one additional reading, from the article list on D2L. Email me your first and second choices by Feb. 4. Be prepared to present an oral overview of the article to the class accompanied by a handout with an abstract and basic information per the assignment sheet.


5) Monday, February 20 — Modern Astronomy (2)

**Readings**

Our goal is to examine how two different historians have approached the same topic (the existence of two competing theories of the universe in the mid-20th century). Works are available on reserve at Bizzell and/or HSCI or through the dissertation database.


**Written Assignment:** With McConnell’s work as a focus, either: 1) Compare and contrast his account with Kragh’s or 2) discuss McConnell’s work in the context of broader trends in the history of astronomy and the history of science. Use Chicago style endnotes for citations (w/o bibliography).

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**Instructor: Dr. Stephen Weldon**

6) Monday, February 27 – Science and Religion: Historiography and Theory

**Readings:**


7) Monday, March 5 -- Science and Religion around the World

Readings:


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Instructor: Dr. Suzanne Moon

8) Monday, March 12 -- Embodied Histories: Breaking Ground in the Sensory History of Technology

Reading:


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Instructor: Dr. Pete Soppelsa

9) Monday, March 26 -- Science, Technology, and the City


10) Monday, April 2 Science, Technology, and Visual Culture


Forum on Victorian Eye in History and Technology Vol. 26, No. 2 (June 2010), pp. 147-189.

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Instructor: Dr. Piers Hale
Over the next two weeks we will look at the relationship between biology and society, and specifically at the relationship between Charles Darwin’s theory of evolution by natural selection and the political and moral economy of industrial England.

**Readings** are listed as required, recommended, or as further reading. **Written assessment will be on required readings only.**

### 11) Monday, April 9

In the first class we shall look at Darwin’s *Origin of Species* (1859). Darwin famously acknowledged the importance of having read the Thomas Malthus’s 1798 essay *On Population*, which went through a renaissance in the mid-late 1830s as a vindication of liberal poor law reform.

Contemporaries of all political persuasions read Darwin’s work as having political implications, and historians continue to debate the significance of this fact for understanding the relationship between science and society.

**Reading:**


*(Required: Introduction; Recommended: Chapters three and four.)*


**Further Reading:**


**Assessment:**

*Written:* Students will write a 1000 word summary and critique of the historiography. Please use the Chicago style of referencing and citation. (Please email your work to me to *phale@ou.edu* by 5:00pm the day before class).

*In class:* You will be expected to be able to comment upon the historiography and its implications for how we understand both science and its history.

### 12) Monday, April 16

**Reading:**


(Note: ensure you are reading the right extracts – in later editions Darwin rearranged the chapter order).


Assessment:

Written: Students will write a 1000 word commentary upon Darwin’s account of the evolution of the moral sentiments. Please use the Chicago style of referencing and citation. (Please email your work to me at phale@ou.edu before 5:00pm the day before class).

In class: You will be expected to be able to discuss Darwin’s work as well as comment on the context and commentary provided in Richards’s chapter.

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Instructor: Dr. Katherine Pandora

Topics in the Cultural History of Science: Childhood Studies

13) Monday, April 23: Entwined Concepts: "Science" and "the Child" in Modern Thought


Further Reading:

- Dorothy Ross, *G. Stanley Hall: The Psychologist as Prophet* (U of Chicago, 1972)

14) Monday, April 30: Scientific Pedagogy and the Child as Learner


HSCI 5990 Syllabus, Spring 2012, p. 6
Further Reading:


George DeBoer, *A History of Ideas in Science Education: Implications for Practice* (Teachers' College Pr, 1991)


David Kaiser, ed. *Pedagogy and the Practice of Science: Historical and Contemporary Perspectives* (MIT Pr, 2005)