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.

Assignments: 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 writing assignment each week. Some instructors have provided specific instructions on how to structure the short writing assignments and given you specific questions to answer. If there are no specific instructions, the assignment will be a 750-900-word review of the readings for that week. The review should go beyond summarizing key points and provide analysis of the topic. 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. Palmeri. 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

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Time</th>
<th>Instructor</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>January 14: 2-4 pm</td>
<td></td>
<td></td>
<td>Introductions</td>
</tr>
<tr>
<td></td>
<td><strong>January 21</strong></td>
<td></td>
<td></td>
<td>MLK day</td>
</tr>
<tr>
<td>2</td>
<td>January 28: 2-4 pm</td>
<td></td>
<td>Pandora</td>
<td>Women’s History</td>
</tr>
<tr>
<td>3</td>
<td>February 4: 2-4 pm</td>
<td></td>
<td>Pandora</td>
<td>Cultural History</td>
</tr>
<tr>
<td>4</td>
<td>February 11: 2-4 pm</td>
<td></td>
<td>Heyck</td>
<td>Birth of Social Sciences</td>
</tr>
<tr>
<td>5</td>
<td>February 18: 2-4 pm</td>
<td></td>
<td>Heyck</td>
<td>Social Sciences in the 20th Century</td>
</tr>
<tr>
<td>6</td>
<td><strong>February 25: 4:30-6:30 pm</strong></td>
<td></td>
<td>Moon</td>
<td>Technology, Modernity, and Efficiency</td>
</tr>
<tr>
<td>7</td>
<td><strong>March 4: 4:30-6:30 pm</strong></td>
<td></td>
<td>Moon</td>
<td>Cultures of Flight</td>
</tr>
<tr>
<td>8</td>
<td>March 11: 2-4 pm</td>
<td></td>
<td>Soppelsa</td>
<td>Technology and European Modernities 1: Time and Space</td>
</tr>
<tr>
<td></td>
<td><strong>March 18</strong></td>
<td></td>
<td></td>
<td>Spring Vacation</td>
</tr>
<tr>
<td>9</td>
<td>March 25: 2-4 pm</td>
<td></td>
<td>Soppelsa</td>
<td>Technology and European Modernities 2: Experience</td>
</tr>
<tr>
<td>10</td>
<td>April 1: 2-4 pm</td>
<td></td>
<td>Palmeri</td>
<td>Modern Astronomy (1)</td>
</tr>
<tr>
<td>11</td>
<td>April 8: 2-4 pm</td>
<td></td>
<td>Palmeri</td>
<td>Modern Astronomy (2)</td>
</tr>
<tr>
<td>12</td>
<td>April 15: 2-4 pm</td>
<td></td>
<td>Hale</td>
<td>Biology and Society (1)</td>
</tr>
<tr>
<td>13</td>
<td>April 22: 2-4 pm</td>
<td></td>
<td>Hale</td>
<td>Biology and Society (2)</td>
</tr>
<tr>
<td>14</td>
<td>April 29: 2-4 pm</td>
<td></td>
<td>Weldon</td>
<td>Science and Religion around the World</td>
</tr>
</tbody>
</table>
1) Monday, January 14 — Introductory class
Instructors: Dr. Stephen Weldon, Dr. Hunter Heyck, Dr. JoAnn Palmeri, Dr. Katherine Pandora, Dr. Piers Hale, Dr. Suzanne Moon, Dr. Peter Soppelsa

Instructor: Dr. Katherine Pandora: Assessing the Standard Narrative

The “standard narrative” of chronology, topics, people, and concepts that has characterized “the modern Survey” taught by successive cohorts of historians of science since the 1950s is one of the most basic meeting points that exists between the discipline and the public. In what form have these founding assumptions persisted, changed, or been challenged, and how do these results shape the lessons we teach in the 21st century? In this segment of 5990 we will put these questions to work by examining two case studies: what impact the emergence of “women’s history” in the 1970s may have had on “the standard narrative” and “the modern Survey,” and to what extent the “open-ended” methodologies of cultural history that emerged in the 1980s have or have not elicited changes in how historians of science introduce the historical foundations of modern science to novices.

Monday, January 28: Women’s Histories of Science: Optional, Obsolete, or “Other”? 

For 1/28, please read Berglund’s book on Maria Mitchell, and prepare a set of reading notes to bring with you to class. These notes should be produced as you read through the text in some format that is agreeable to you and that can be turned in (so, for example, they may be handwritten). These notes can consist of: questions that are raised for you (regarding the historical context, specific historical data, historiography, claims by the author, etc.) as you read; connections that may occur to you between the content and form of the text and previous work you’ve read; relevance to experiences you’ve had; how the history in this text may provide material you could draw on for research and/or teaching in history of science; your responses to the historical episodes and life histories themselves; as well as other possibilities. What you’ll produce is a set of notes, not a finished essay. If you have any queries about the process, please don’t hesitate to ask me (kpandora@ou.edu).

The other three items under “Reading” will be background for our discussion. The items under “Further Reading” are for later reference if you would like to explore additional perspectives.

**Reading:**

Renee Berglund, *Maria Mitchell and the Sexing of American Science: An Astronomer among the American Romantics* (Beacon Press, 2008) || On 3-day reserve at the Bizzell Circulation Desk under HSCI 5550.001, “Graduate Seminar on Gender and Science” (Pandora)

Naomi Weisstein, “‘How can a little girl like you teach a big class of men?’ -- the Chairman Said and other Adventures of a Woman in Science.” In S. Ruddick and P. Daniels, eds., Working it Out: 23 Writers, Artists, Scientists and Scholars Talk About Their Lives and Work (Pantheon, 1977) || online at http://www.uic.edu/orgs/cwluherstory/CWLUMemoir/naomiscientist.html


Further Reading:


Monday, February 4: Open-Ended Research Methods and the Nature of Cultural History: What if Questions are More Important than Answers?

For 2/4, we shift from a topical emphasis to a methodological emphasis, and ask how the open-ended exploratory methods characteristic of cultural history work in practice. In order to do this we will be considering your individual reading choices in relation to each other, and seeing how to generate hypotheses about cultural patterns from this subset, as well as from the larger list as a whole. (The larger list is a selection from books I have assigned in my graduate courses over the years, or that have just been published and I would have assigned this year.) The Geertz and Glassie readings are background for our discussion (please note that the Glassie is a long piece, so waiting to the last minute for this one isn’t a good idea. It is beautifully written so it is not a hard slog, but it is full of ideas that are considered at length. You can access this item via the online library catalog.) The “Further Reading” is for later reference if you would like to see how the hypotheses and patterns we identify relate to research in American cultural history.

Your written assignment will come in two parts: 1) For 2/4, write approximately three pages discussing the most significant ways in which the topic in your text relates to its cultural context (you will turn in a copy to me and you will keep a copy); and 2) After our class discussion, write approximately two pages of any additional thoughts you now have relating to the topic and its cultural context, and append it to your first draft (you will turn in the now 4-5 page paper to me via email: kpandora@ou.edu). To keep these thoughts fresh, my suggested due date is 2/7, although if you would like a different due date, let me know.

Reading:

You will choose a text from the list of 30 books supplied by Professor Pandora (you’ll receive the list via email week 1 -- it will have links that allow you to look up book info). Choosing a book as early as possible will allow you to locate a library copy, to ILL the book, to find an online version, or to purchase it. Let me know if you
have any problems; I am likely to have a copy as well. You need to let me know your choice by 1/28 so I can prep for the session.


Further Reading:
Halttunen, Karen, ed. A Companion to American Cultural History (Blackwell, 2008) [The library has online access to this text.]

Instructor: Dr. Hunter Heyck

Monday, February 11 — The Modern Social Sciences
Readings:

Your writing assignment for this week is to write a short, three-paragraph response to the readings. The first paragraph should be a summary of Ross’ core argument regarding the role of “American exceptionalism” in modern American social science, especially as it played out before the Progressive Era. The second paragraph should compare and contrast Ross’ argument to Heyck’s, as presented in his overview of the emergence of the modern social sciences. The third paragraph should provide your own reflections on and questions about the history of the social sciences.

Monday, February 18 — 20th Century Social Science
Readings:
Ross, The Origins of American Social Science, Chapters 6-10 and Epilogue;
Hunter Heyck, "Modernity and Social Change in American Social Science," chapter 5 of The Age of System, (my forthcoming book--will be available as PDF online through D2L).

Your writing assignment for this week is to write a short, three-paragraph response to the readings. The first paragraph should be a summary of Ross’ core argument regarding the
role of a changed historical consciousness in Progressive-Era (and after) American social science. The second paragraph should compare and contrast Ross’ argument to Heyck’s, as presented in his chapter on ideas about modernity and social change. The third paragraph should provide your own reflections on and questions about the history of the social sciences in the 20th Century.

Instructor: Dr. Suzanne Moon

Monday, February 25 -- Week 1: Technology, Modernity, and Efficiency

Readings:

E.P. Thompson, “Time, Work-discipline, and Industrial Capitalism”, *Past and Present* 38, 56-97. (available on D2L)

Assignment will be a 4-5 pp. paper, responding to question posted on D2L the week before class and due before class starts.

Monday, March 4 -- Week 2: The “archetypal symbol of the modern age”: Cultures of Flight

Readings:
(Out of print, unfortunately. It will be on reserve at Bizzell.)

(Please get the following two readings from the Project Muse database on the library website.)


Assignment will be a 4-5 pp. paper, responding to question posted on D2L the week before class and due before class starts.
Instructor: Dr. Pete Soppelsa

Monday, March 11 -- Technology and European Modernities 1: Time and Space


Monday, March 25 -- Technology and European Modernities 2: Experience


Bernhard Rieger, Technology and the Culture of Modernity in Britain and Germany 1890-1945 (Cambridge University Press, 2005).

Instructor: Dr. JoAnn Palmeri

Monday, April 1 — Modern Astronomy (I)

One goal for these two sessions is for students to become familiar with topics and trends in the history of 19th/20th century astronomy. We will read historiographical essays and examples of scholarly work in the field, and then examine how two different historians have treated the same historical episode (the resolution of the Steady State-Big Bang cosmological debates).

A second goal is for students to acquire a sense of the intellectual as well as professional landscape of a particular subfield in the discipline. I will discuss some of my own experiences with the community of professional historians of astronomy to highlight the types of networking and professional opportunities available to you as you move along in your career.

Readings & Assignments

1. Syllabi
   To put this subfield in perspective, let’s start by examining how astronomy after the Scientific Revolution is treated in our survey courses. Bring a copy of the syllabus from a recently taught HSCI 3023 class, or from a section you are currently auditing. Browse my syllabus posted on D2L.

2. Research Articles & Historiography
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 are available through OU’s online library catalog.


b. **Read and present an oral report** to the class on an article selected from the list posted on D2L. Email me your first and second choices by Mar. 15. Your report should include a summary of the argument, a discussion of the author’s approach (characterization of method/sources used), and your general response to what you have read. You should also include basic information about the author and the journal. Most of these articles should be available through OU’s online library catalog. If not, request a copy at the History of Science front desk.

c. **Read** the following for historiographical perspective and background on the field:

3. **Resources for Research, Teaching, & Professional Development**

Prior to class please **browse** the following two sets of resources listed below. **Select one item** you find particularly interesting or useful and be prepared to talk very briefly about it with your classmates.

a. The list of online resources posted on D2L. "Researching History of Modern Astronomy"

b. The cart of books in the History of Science stacks "Core Resources for the History of Modern Astronomy"

**Written Assignment**

In a **3-4 page essay** you will explore some aspect of the historiography of modern astronomy. You may focus your discussion on the article you selected, or on the Kragh/Smith article, or on some theme you find of interest in these readings and the background materials. You may choose to situate the history of modern astronomy within the context of broader trends in the history of science, or with respect to other topics with which you are familiar (history of technology, gender studies). Use Chicago style end notes for citations.
Monday, April 8 — Modern Astronomy (2)

Readings

These works are available on reserve in Bizzell or in the History of Science Collections, and/or through the dissertation database.


Written Assignment

With McConnell’s work as a focus, prepare a 4-5 page essay where you will 1) Compare and contrast his account of this historical episode with that of Helge Kragh’s, or 2) Discuss and analyze McConnell’s case study as history. You may want to characterize his historical approach and analyze his selection and use of sources, and the presentation of his argument. You may want to discuss and situate his effort within the context of trends in the discipline. In thinking about McConnell’s work, consider the following: Does he answer the questions posed? Does he use and analyze the sources effectively? What are the strengths and weaknesses of his account? How clear is he in conveying his own thinking about method and historical approach to the reader? Use Chicago style end notes for citations.

Instructor: Dr. Piers Hale

Monday, April 15


Monday, April 22


Assessment will be a book review (40%) and discussion (60%) each week.

Instructor: Dr. Stephen Weldon

Monday, April 29 -- Science and Religion: Historiography and Theory

Readings:


**Assignment**: The final assignment will be due after our discussion on May 6. We will discuss the content of that final essay during the class.