HSCI 4993: Capstone in History of Science—Science, Exploration, and History
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Course Description:
This course is the capstone in the History of Science, Technology, and Medicine for 2012-13. The primary goal of the course is to help you research and write a substantial research paper of at least 20 pages (6,000 words of main text, minimum, plus notes and bibliography). It is very much a writing-intensive course, with a number of preliminary writing assignments designed to help you build towards the final paper. By the end of this course, you should be able to:

- Read, understand, and critically evaluate primary sources in context;
- Read, understand, and critically evaluate secondary sources in context;
- Demonstrate critical-creative thinking and effective communication skills in speech, writing, and new media;
- Demonstrate the ability to ask and answer a good research question, including the ability to use library and digital resources to identify and access relevant sources;
- Demonstrate a general understanding of what it means to study History of ST&M in context

Note that one of the goals above includes communication in speech and in new media as well as in writing. To that end, near the end of the course you will make a short presentation (15-20 minutes) based on your paper, for which you will create a Powerpoint/Keynote or Web-based presentation. This digital presentation, and your final paper, will be archived on the Department Web site. You are encouraged to use these papers and presentations as part of the University Undergraduate Research Day and as part of the Department's Student Research Day in the spring.

The secondary goal of this course is to look at one particular theme in the History of ST&M: exploration. This theme has been chosen to give a certain unity to the course readings while being relevant to the diverse interests of the class. Students are encouraged to write their papers on topics related to the course theme, but it is not required.

Course Mechanics:
Each week we will have two class meetings. The Tuesday meeting will focus on a discussion of readings related to science and exploration. The Thursday meeting will focus on exercises and assignments related to research, critical reading, and writing. You are expected to attend all class meetings, barring illness or family emergencies. If you have to miss class or run into difficulties with assignments, let me know as soon as possible. I am happy to meet with you outside of class to help you meet the high standards of this course.

Grade Breakdown:

- Final Paper: 40%
- Final Presentation: 20%
- Preliminary Assignments (outlines, drafts, etc.): 20%
- Discussion of Readings: 20%

Books to buy (all are available from a variety of online retailers; none are very expensive):

- Richard Holmes, *Age of Wonder* (Vintage, 2010; also available as Kindle e-book)
- Charles Darwin, *Voyage of the Beagle* (Modern Library 2001 or Charles River Editors Kindle version)
- Edward Larson, *Empire of Ice* (Yale 2011 as hardback; also available as Kindle e-book)
COURSE SCHEDULE

Week 1: Course Introduction
August 23. Writing—best passages, close readings.

Week 2: Exploration in History: 1500s-1600s
August 28. Readings:
- Adas, Machines as the Measure of Men, Chapter 1 (On D2L).
- Smith and Findlen, eds., Merchants and Marvels, Chapters 6, 7, and 9. (On D2L).
August 30. Discuss Topics and Sources. Career services visit.

Week 3: Cosmic Explorers
September 4. Readings:
- Goetzmann, New Lands, New Men, Chapter 1.
- Mary Terrall, The Man Who Flattened the Earth, Chapters 4 and 5 (On D2L).
September 6. Discuss Turning Topics into Questions, Taking Notes.

Week 4: Natural Wonders
September 11. Readings:
- Holmes, Age of Wonder, Chapter 1.
September 13. Discuss Methods and Models.

Week 5: The Heavens and the Earth
September 18. Readings:
- Holmes, Age of Wonder, Chapter 4.
- Outram, "New Spaces" (On D2L).
- Rudwick, "Minerals, Strata, and Fossils" (On D2L).
September 20. Discuss Methods and Models.

Week 6: Humboldtian Science
September 25. Readings:
- von Humboldt, Personal Narrative (pp. 5-84, 117-28, 138-39, 253-58, 270-71, 286-87).
- Goetzmann, New Lands, New Men, Chapter 5.
September 27. Discuss preliminary bibliographies.

Week 7: Darwiniana
October 2. Readings:
- Darwin, Voyage of the Beagle, Chapters 2, 3, 5, 8, 10, 14, 17 and last section of 21.
October 4. Discuss visual sources/material sources.

Week 8: Exploration and Empire
October 9. Readings:
- Adas, Chapters 3-4.
- Goetzmann, New Lands, New Men, Chapter 7.
October 11. Discuss revised bibliographies and analytic frames.

Week 9: To the Ends of the Earth
October 16. Reading:
- Larson, Empire of Ice, Chapters 1-4 (pp. 1-152).
October 18. Discuss connecting analysis of primary sources to frameworks and questions from secondary sources.
Week 10: The World Encompassed
October 23. Reading:
• Larson, Empire of Ice, Chapters 5-end.
October 26. Discuss style and audience in papers and presentations.

Week 11: Discovering Ourselves?
October 30.
• Turn in Outlines!!! Discuss outlines.
November 1. No Class.

Week 12: From the Earth to the Moon
November 6. Readings/Viewings:
• select among Destination Moon; Apollo 13; The Right Stuff; 2001: A Space Odyssey.
• Hubble Photos.
• Turn in Introductions!!!
November 8. Discuss Introductions.

Week 13: Papers!
November 13. Turn in Draft Papers!!!
November 15. Discuss Draft Papers.

Week 14: Thanksgiving
November 20. No Class.
November 22: No Class. Thanksgiving Holiday.

Week 15: Presentations
November 27. Discuss Draft Papers.
November 29. Presentations.

Week 16:
December 4. Presentations.
December 6. Turn in Final Papers!!!

Final Exam Time Slot: Tuesday December 11, 1:30—3:30 pm.
There is no final exam for this course; instead, we will meet at this time to have coffee and doughnuts, return final papers, and do self-assessments of achievement in relation to Departmental goals for majors.