HISTORY 4830 (DHA)
THE STRUCTURE OF ENGINEERING REVOLUTIONS
Fall Semester 2006

Prof. Tim Wolters (twolters@hass.usu.edu); RA Hailey Ferrara (haileym@cc.usu.edu)
Class: MW, 3:30 PM - 4:45 PM, Old Main 119
Office hours: MWF, 2:25 - 3:25pm, Old Main 323F (or by appointment)

Course Description and Objectives:

This course takes an integrated approach to science and engineering, broadly defined, and is geared toward those who recognize that technical proficiency is only one of many skills necessary to succeed in the working world. It revolves around students' efforts to research and write the history of a major engineering project, new technology, technically oriented company, or scientific concept from multiple perspectives: technical, political, economic, and socio-cultural. Research will involve finding and using original sources, conducting written and/or oral interviews, and "looking over the shoulders" of inventors, engineers, and scientists. Students work in teams and make formal presentations of their research at the end of the semester. Topics this year include (but are not limited to): NASA's Get-Away Special program, cinematic motion and theories regarding persistence of vision, Cache Valley's industrial infrastructure, and nuclear power.

The prerequisites for this course are: CIL - Spreadsheets, CIL - Electronic Presentations, ENGL 2010, and *either* STAT 1040 *or* MATH 1050 (or a course that requires MATH 1050 as a prerequisite). This course is intended primarily for juniors and seniors in the colleges of agriculture, engineering, natural resources, and science. If neither your major nor your minor gives you a significant level of technical proficiency, you likely will find this course very difficult and should think seriously about your decision to take it.

All students should be aware that this course requires a considerable amount of self-study and a willingness to work with others (70% of your final grade is based on collaborative work). If you desire a more traditional lecture-style class, then this course is not for you. On the other hand, if you want to employ an historical methodology to the types of projects you may encounter in the working world, this course should meet your expectations. Please note that HIST 4830 utilizes a Rhetoric Associate (RA) to help students improve their writing skills. Use of the RA (or the USU Writing Center) for paper assignments is MANDATORY.

Required Reading:

Theresa M. Collins and Lisa Gitelman, *Thomas Edison and Modern America: A Brief History with Documents*, Boston: Bedford/St, Martins, 2002.

Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3rd edition. Chicago: University of Chicago Press, 1996.

Michael Crichton, *Timeline*. New York: Alfred A. Knopf, 1999.

Edward R. Tufte, et al., *Visual Explanations: Images and Quantities, Evidence and Narrative*. Cheshire, Conn.: Graphics Press, 1997.

Requirements and Grading:

Two Response Papers (3-4 pages) – 20% (i.e., each paper counts 10%)

Preliminary Research Report – 10%

Class Participation – 10%

Final Presentation – 25%

Peer Evaluation – 10%

Final Research Report (apx. 20 pages) – 25%

The response papers are based on assigned readings. Electronic submissions (in either MSWord or RTF format) are required. No extensions will be granted because I use your papers as part of class discussion, and a late paper obviously cannot be incorporated into the applicable class discussion. If you have had trouble meeting deadlines in the past, be sure to write your response papers earlier rather than later in the semester.

I will acknowledge receipt of all papers. If you do not have a receipt from me, then you may assume I do not have your paper. Call me at 797-1295 if you have submitted your paper and do not have a receipt within one hour of the due date/time (i.e., by 0900 for a paper due at 0800).

Your preliminary research report, final presentation, and final research report will all be prepared collaboratively. In a majority of cases one grade will be given to all members of group; however, I reserve the right to assign individual grades whenever it becomes obvious that a group member is not "carrying his or her weight."

Disability Resource Center:

If accommodations for the course are needed, students should contact the Disability Resource Center, located in the University Inn, Room 101 (7-2444). The Center can provide a copy of this syllabus in a suitable alternate format.

Miscellaneous:

If you have not already done so, you should familiarize yourself with the university's rules concerning academic honesty, available in the current catalogue (available on-line

at http://www.usu.edu/ats/generalcatalog/). Any cheating, falsification, or presentation of another's work as your own without proper credit being given (i.e., plagiarism) will result in an "F" and may lead to suspension or expulsion. If you are uncertain about what constitutes plagiarism, see me BEFORE turning in a given assignment.

University policy states that a student may receive an "I" only for extenuating circumstances, such as serious illness or a death in the family. An incomplete cannot be used to avoid a poor grade or to retain financial aid.

Course Schedule:

MON, AUG 28:	Introduction, Expectations, and the RA Program	
WED, AUG 30:	Individual meetings with Professor Wolters	
MON, SEP 4:	No Class – Labor Day; *Papers due to RA*	
WED, SEP 6:	Case Study: Electric Light and Power	Collins, 1-62; 80-127
MON, SEP 11:	No Class – Self-Study; *Papers due to RA*	
WED, SEP 13:	The Structure of Revolutions	Kuhn, 1-173
MON, SEP 18:	Team Assignment/Project Selection	
WED, SEP 20:	Using Library Resources for Research	MC Library, Room #122
MON, SEP 25:	Lecture – M.E. in America, 1830-1910	ENG Bldg., Room #238
WED, SEP 27:	Group Writing & Collaborative Work	*Handouts Provided*
FRI, SEP 29:	*Papers due to RA*	
MON, OCT 2:	Science, Engineering, and History	Crichton, 1-444
WED, OCT 4:	Project Proposals/Research Plans	*Team Presentations*
MON, OCT 9:	**Research Report Outlines Due**	*Submit to Prof. Wolters*
WED, OCT 11:	In-Class Group Work; *Papers due to RA*	
MON, OCT 16:	Visual Materials & Argumentation	Tufte, 1-151
WED, OCT 18:	In-Class Group Work	
MON, OCT 23:	Progress Reports: Teams A/B	*Team Presentations*
WED, OCT 25:	Progress Reports: Teams C/D	*Team Presentations*
MON, OCT 30:	In-Class Group Work	
WED, NOV 1:	In-Class Group Work	
MON, NOV 6:	**Preliminary Research Reports Due**	*Submit to RA*
WED, NOV 8:	Presentation Rehearsals	*Teams A/B*
MON, NOV 13:	Presentation Rehearsals	*Teams C/D*
WED, NOV 15:	Final Presentations	*Teams A/B*

MON, NOV 20:	Final Presentations	*Teams C/D*
WED, NOV 22:	No Class – Thanksgiving Holiday	
MON, NOV 27:	Individual meetings with the RA	
WED, NOV 29:	Individual meetings with the RA	
MON, DEC 4:	No Test Week – Independent Study	
WED, DEC 6:	No Test Week – Independent Study	
WED, DEC 13:	**Final Research Report Due**	*Submit to Prof. Wolters*

Team Assignments & Contact Information:

Team A: **TBD**
Team B: **TBD**
Team C: **TBD**
Team D: **TBD**