HSCI 3013-100, Physical Sciences 226, TuTh 3:00-4:15pm
History of Science to the Age of Newton -- Fall Semester 2013
First Day Handout

For complete course information go to:
http://faculty-staff.ou.edu/B/Peter.Barker-1/3013/

Instructor: Peter Barker, e-mail: BarkerP@ou.edu, tel.: 325-2242
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Texts

Course outline (subject to change - last revision 19 Aug 2013)

Week 1 begins Aug 20
Introduction -- science vs. myth: Pedersen pp. 1-16.
Discussion exercise: Anaximander's fragments

Week 2 begins Aug 27
Greek natural science to Aristotle: Pedersen pp. 16-27
**Aug 29 : Graded test on class Operations and Procedures**
Discussion exercise: Elements and spheres

Week 3 begins Sept 03
Aristotle's physics and cosmology: Pedersen pp. 28-33, 123-128; Osler Ch 1.
Discussion exercise: Aristotle on the shape and position of the Earth
Please read this before class and bring a copy with you.

Week 4 begins Sept 10
Early astronomy esp. Eudoxus: Crowe pp. 1-29; Pedersen pp. 34-76.
Discussion exercise: Scipio's Dream

Week 5 begins Sept 17
Discussion exercise: *Ptolemy: Sizes and distances*

Week 6 begins Sept 24  
The fall of Rome and the rise of Islam: Pedersen pp. 150-170.  
Discussion exercise: *Tusi couples*  
**Sept 26** Last date to submit Research Essay #1

Week 7 begins Oct 1  
Copernicus: Pedersen pp. 214-245; Crowe 82-99;  
Copernicus, *On the revolutions* = Crowe, pp.100-133  
Discussion exercise: *Spheres and orbs in Copernicus*

Week 8 begins Oct 08  
Tycho: Osler ch. 2; Crowe pp. 130-45.  
*Tycho’s problems with orbs.*

Week 9 begins Oct 15 Galileo: Pisa to Padua  
reading: Crowe pp. 156-172; Osler 61-76; Galileo, *Sidereus Nuncius* = Finnochiaro pp. 1-84.  
Discussion exercise: *His Holiness the Pope seeks your advice on the appointment of an Astronomer*

Week 10 begins Oct 22: Galileo Game Week or Galileo essay week  
*During this week students will either participate in the Galileo game, or complete an alternative essay assignment carrying the same course credit.*

Week 11 begins Oct 29 Galileo: 1616 and all that  
Oct 29 Last date to submit Research Essay #2 if you are not participating in the Galileo game

Week 12 begins Nov 5 Galileo: *Dialogo*, trial and sequel.  
Nov 5 reading: Finnochiaro 190-271; Nov 7 reading: Finnochiaro 271-294  
Discussion exercise: *Motion puzzles*

Week 13 begins Nov 12:  
Galileo to Newton: reading: Finnochiaro 334-51. Osler Chaps. 4, 5

Week 14 begins Nov 19  
Newton, science and religion: Osler ch. 6,7,8.  
Nov 21 Last date to submit Research Essay #3

Week 15 Nov 26 (one class only)  
**VISIT to History of Science Collections, Bizzell Library 5th floor**  
Nov 27 – Dec 1 Thanksgiving Break

Week 16 begins Dec 03  
Conclusion and Review exercises

**Thursday Dec 12** Final Exam 4:30-3:30pm in PHSC 226
Grades will be computed as follows: O&P Test = 10%; research essays #1, #3 = 20% each; EITHER participation in in Galileo game OR submission of research essay #2 = 20%; final exam = 20%; other class participation = 10%. There is no curve. Late delivery of essays will not be permitted except under circumstances of emergency or illness, verifiable to the satisfaction of the Instructor. However, it is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. If you wish to be excused for religious observances, please contact your Instructor at least one week before you will be absent, in order to reschedule the corresponding work or examinations.

There will be a graded test covering course organization and policies on Thursday August 29. The Final Examination will be on Thursday, December 12, 8:00-10:00am. It will be in essay format. Blue Books will be provided. Exam questions will be posted on this site, one week before the exam. Students may consult books and notes during the final exam, but transcription of complete answers is prohibited.

Students will also complete two mandatory research papers, the first to be submitted at any time up to September 19, and a second at any time up to November 21. See separate instructions for Research Paper #1 and Research Paper #3, and grading scheme for essays, posted on D2L.

In addition, students may elect to participate in the Galileo game during weeks 10-12, or submit an additional research paper (Research Paper #2). This portion of the grade will be given for participation. Students will receive the full participation grade on completion of all elements of the Galileo game (pre-test, game play and post-test) and will not be graded on their answers on the post-test. Alternatively, students will receive the full participation grade on completion of Research Essay #2, in the same format as Research Essays #1 and #3. Again, see grading scheme for essays, posted on D2L.

Class participation, and especially participation in discussion exercises, will make up the final 10% of the grade. Other than excused religious holidays, students absent from more than three classes will be penalized one letter grade within this grade item.

Academic honesty We assume you understand and adhere to the norms of academic honesty stated in A Student’s Guide to Academic Integrity at the University of Oklahoma. For links to this site see the course web page. We also assume you are honest unless proven otherwise, so if you are not sure about something ask us. We encourage you to work together (and with us) to prepare for class, exams and essays—on the understanding that the final version is all your own work. ‘Plagiarism’ used to mean copying out of a book. Electronic media like Wikipedia pose special problems. While we encourage you to use them as sources of ideas and information, no sentence that you submit as your own work should be identical to any sentence in a book or electronic medium. If we judge that work you submit fails to meet these standards, the following things will happen:
(1) On the first occasion, you will be asked to amend the work and resubmit it to receive a grade.
(2) On the second occasion you will receive a formal admonition, as explained in Rights and Responsibilities under the Academic Misconduct Code, and a grade of zero for the work.
(3) On the third occasion, a complaint of academic misconduct will be filed, as explained in Rights and Responsibilities under the Academic Misconduct Code.

Students with disabilities Students in this course who have any disability that may prevent them from fully demonstrating their abilities should contact the Instructor as soon as possible to discuss accommodations necessary to ensure full participation and facilitate their educational opportunities.