

History 106  
**Introduction to the History of Science:  
THE SCIENTIFIC REVOLUTION**  
Professor Robert S. Westman  
Fall Quarter 2008  
Tu Th 3:30-4:50 p.m.  
Peterson Hall 102

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Office Hours: Wed., 1-3; after class some Tuesdays & by appt.  
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**Required Reading** (Available at **UCSD Bookstore**)  
**Book Abbreviations in square brackets below [=]**

- \*\*Peter Dear. **Revolutionizing the Sciences: European Knowledge and Its Ambitions, 1500-1700**. Princeton Univ. Press, 2001 [=RS]
- \*\*René Descartes. **Discourse on Method**. Hackett Publishing Co. [=DM]
- \*\*Thomas S. Kuhn. **The Copernican Revolution**. Harvard University Press, 1957 [=CR]
- \*\***Sourcebook Readings (=SB): The Scientific Revolution**
- \*\***Other Readings: WebCT**

**Recommended Reading**

- !David C. Lindberg and Ronald L. Numbers, eds. **God and Nature: Historical Essays on the Encounter between Christianity and Science**. University of California Press, 1986.
- !Owen Gingerich. **The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus**. New York: Walker, 2004.

**Lecture Topics and Associated Readings**

**Part I: Copernicus's Problematic**

- 25 Sept. **Introduction. The University: What would you have learned in the 16C? Where would you have learned it?**
- 30 Sept., 2 Oct. **The University Curriculum I: Aristotelian Natural Philosophy**  
(a) Dear, **RS**, pp. 1-18; (b) Kuhn, **CR**, ch. 3; (c) SB 11: Ashworth, pp. 65-67.
- 7 Oct. , 9 Oct. **The University Curriculum II: The Science of the Stars**  
(a) Kuhn, **CR**, chaps. 1, 2; (b) SB 1: Grafton, 22-37; (c) Dear, **RS**, pp. 18-29; (d) Animations of planetary motions by Prof. Dennis Duke [Google: "Dennis Duke"> "Almagest Planetary Model Animations"; Scroll down to "II. Stand Alone Versions"; also on WebCT]; (d) WebCT: Ptolemy, *Almagest*, selections. <http://www.scri.fsu.edu/~dduke/models>
- 14, 16, 21 Oct. **Copernicus's Reform: What did he do? Why did he do it?**

Read: (a) Dear, **RS**, pp. 30-45; (b) Kuhn, **CR**, pp. 123-184; (c) SB 2: Westman, "Copernicus and the Crisis of the Prognosticators"; (d) SB 3: Copernicus, **Commentariolus**; (e) Duke Animations [see link]

>>>>**Examination I: Thursday, October 23 (in-class)**<<<<

**Part II: Conflicted Modernizers, Singular and Recurrent Novelties**

**28 Oct. The Copernicans and the Churches: Convincing Catholic Rome and Lutheran Wittenberg**

(a) SB 4: Westman, "The Melanchthon Circle, Rheticus and the Wittenberg Interpretation of the Copernican Theory;"(b) SB 5: Westman, "The Copernicans and the Churches"

**30 Oct. Kepler: From the *Cosmographic Mystery* to the *New Astronomy***

Kuhn, **CR**, pp. 200-219; SB 6: Voelkel, **Kepler**, pp. 24-73.

**4 Nov. Kepler and Galileo: Unexpected Novelties in the Heavens**

Read: (a) Dear, **RS**, pp. 65-79, 101-111; (b) Kuhn, **CR**, 219-225; (c) WebCT: Galileo, *Sidereal Messenger* (excerpts); (d) WebCT: Phyllis Allen, "Problems Connected with the Development of the Telescope (1609-1687)," *Isis*, 1943, 34(4): 302-311.

>>>>**Examination II: Thursday, November 6 (in-class)**

**Part III: From Philosophizing Astronomers to New-Style Natural Philosophers**

**11 Nov. New Visions and Places of Scientific Authority in the Seventeenth Century**

Read: Dear, **RS**, pp. 111-130; SB 7: Popkin, **History of Scepticism**, Introd., chap. 1

**13, 18, 20 Nov. Divine Activity and the Mechanical Philosophy**

Read: (a) Dear, **RS**, pp. pp. 80-100; (b) Kuhn, **CR**, pp.238-242; 252-4; (c) Descartes, **DM** (entire); d) SB 11: Ashworth, pp. 61-65; 68-74.

**25 Nov. The Science of Politics and the Politics of Experiment: Galileo, Thomas Hobbes and Robert Boyle**

Read: (a) Dear, **RS**, pp. 131-148; (b) SB 8: W.T. Jones, **A History of Western Philosophy**, vol. 3, pp. 104-114; c) SB 9: Shapin, "Pump and Circumstance"; (e) SB 10: The Principle of the Barometer. Excerpts from Evangelista Torricelli (1644) and Robert Boyle (1660).

>>>>**Thanksgiving Recess: Thursday, 27 November**<<<<

**2, 4 Dec. Atheism Resolved: How Sir Isaac Newton Restored Law n'Order to the West'**

Read: (a) Dear, **RS**, pp. 149-170; (b) Kuhn, **CR**, pp. 252-265; c) SB 11: Ashworth, pp. 74-84; d) SB 12: Newton, "System of the World," 253-274.

**Grading Requirements**

+**Examination I** (25%): Bluebook/Essay

- +**Examination II (25%):** Bluebook/Essay
- +**Final Examination (50%):** Bluebook/Essay
- +**Final Exam Date:** **MONDAY, DECEMBER 8, 3-6 P.M.**