

HISTORY OF SCIENCE 323 / HISTORY 323
The Scientific Revolution: from Copernicus to Newton
 Fall 2002
 3:30-4:45 TR
 4308 Social Science

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COURSE DESCRIPTION

This course investigates the renaissance and revolution in European science that began in 1543 with the heliocentric astronomy of Nicolaus Copernicus and ended with Isaac Newton's death in 1727. We will pay particular attention to issues of tradition and novelty, institutional settings for scientific activity, and the relationship between science and religion. Topics covered will include the Copernican cosmology and the trial of Galileo, the mechanical philosophy, Newton's theory of gravitation, the appearance of new scientific organizations such as the Royal Society of London and the Paris Academy of Sciences, the role of science in European exploration and expansion, and perceptions of the scientist's place in society.

This class also emphasizes the skills of analyzing historical documents and of constructing persuasive arguments about historical questions. It is therefore extremely important that you try to complete the readings assigned for each class session before coming to class. Please bring the readings – especially those in the Course Reader – to class with you.

COURSE REQUIREMENTS AND GRADING

1. Attend classes.
2. Prepare readings.
3. Grades will be based on class participation, an internet project, and 3 take-home essay exams. Grades will be calculated using the following rough guidelines:

class participation	~10%
internet project (due in class, Tues., Dec. 10)	~20%
exam 1 (due in class, Tues., Oct. 8)	~20%
exam 2 (due in class, Tues., Nov. 12)	~20%
exam 3 (due Tues., Dec. 17, 12:00 noon)	~30%

Honors students need to complete an honors assignment. Please see me for details.
 Graduate students should also enroll in History of Science 623 (for assignments, see the HOS 623 syllabus.)

COURSE POLICIES

I will make every effort to honor requests for reasonable accommodations made by individuals with disabilities. If you think you qualify for accommodation, please contact the McBurney Disability Resource Center at 263-2741 <<http://jumpgate.acadsvcs.wisc.edu/~mcburney/>> to establish your eligibility for services. If you require such accomodation, please let me know as soon as possible in the semester. All requests are confidential.

Academic honesty is expected of students at the University of Wisconsin-Madison in compliance with the student code of conduct. All written work that you turn in under your name should be solely your work. Both paper and internet sources must be acknowledged; failure to understand what counts as plagiarism is not an adequate excuse. Plagiarism and other forms of academic misconduct carry penalties. Please feel free to talk to me if you have any questions about how to properly cite sources in your written work.

- Oct. 22 **the Cartesian world**
 CR Descartes, The world (1633/1677), chaps. 5-7
 D pp. 86-100 [chap.5, sections III-VI]
- Oct. 24 **Newton**
 CR Newton, System of the world (1685), selections
 Newton, Opticks (1706/1717), Query 31, selections
 D pp. 149-63 [chap. 8, sections I-II, especially section II]
- Oct. 29 **Newtonianism**
 CR Newton, Principles (1687/1713), 'General Scholium' + theological MS;
 Cotes' preface to the 1713 Principles + Leibniz letters
 D pp. 163-67 [chap. 8, sections II-III]
- Oct. 31 **monsters and miracles**
 CR Of two woonderful Popish monsters (1586), selections
 Paré, On monsters and prodigies (1573), selections
- Nov. 5 **the Baconian project**
 CR Durston, 'A narrative of a monstrous birth' (1670)
 Bacon, Great instauration (1620), 'Preparative'
 D pp. 57-64 [chap. 3, sections III-IV]
- Nov. 7 **History of Science Society conference (Milwaukee) – no class**
- Nov. 12 **<EXAM 2 due today>**
experimentation
 CR Galileo, Dialogue on the two world systems (1632), selection
 Torricelli and Pascal on the Torricelli experiment (1640s)
 Boyle, 'New experiments' (1668)
 D pp. 131-45 [chap. 7, sections I-III]
- Nov. 14 **European exploration**
 CR questionnaires on Spanish America
 D pp. 123-30 [chap. 6. section V]
- Nov. 19 **the Royal Society**
 primary source reading to be assigned online
 D pp. 117-23 [chap. 6, section IV on the Royal Society]
- Nov. 21 CR Woodward, Brief instructions (1696), selections
- Nov. 26 **the Royal Academy of Sciences**
 CR Cassini, 'Voyages to Cape Verde' (1684), selections
 Tachard, A relation of the voyage to Siam (1688), selections
 D pp. 114-17 [chap. 6, section IV on the Academy of Sciences]
- Nov. 28 **THANKSGIVING – no class**
- Dec. 3 **salons and science**
 CR Fontenelle, Conversations on the plurality of worlds (1686), selections
 D pp. 156-57 (review)
- Dec. 5 **library research – no class**
- Dec. 10 **<INTERNET project due today>**
science and society
 CR Bacon, New Atlantis (1627), selections
- Dec. 12 CR Swift, Gulliver's travels (1735), part 3, selections
- Dec. 17 **FINAL EXAM due Tuesday by 12:00PM noon**

