

HISTORY OF SCIENCE 324
SCIENCE IN THE ENLIGHTENMENT
Spring, 1997

Instructor: Tom Broman

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Off. Hours: 10:00 a.m. - 12:00 Wednesday

GENERAL DESCRIPTION

The primary purpose of this course is to present an overall picture of eighteenth-century thought, especially as it relates to science. Since it is my conviction that this is best done through contact with the eighteenth-century writers themselves, the readings emphasize primary sources (that is, writings from the period rather than later interpretations by historians). In order to give you an opportunity to discuss and understand the readings, the course will feature two lectures and one discussion section per week. These discussion sections are NOT optional, and as you can see from the course grading (below), they will carry a considerable weight in your final grade. So it will be worth your while to prepare for them by doing the reading.

There are 2 required textbooks, available at the University Book Store, or on reserve in College Library:

Outram, *The Enlightenment*

d'Alembert, *Preliminary Discourse to the Encyclopedia of Diderot*

In addition, there is a packet of xeroxed readings available for purchase in the History of Science Office (7143 Social Science), or on reserve in College Library.

NOTE: There is an excellent survey of 18th-century science in Thomas Hankins, *Science and the Enlightenment*. Unfortunately, Hankins's book is out of print, so you will have to read it on reserve in College Library.

COURSE REQUIREMENTS AND GRADING

If you are an undergraduate, your work will consist of three 5-6 page papers, the last of which will be written at the end of the course, and of course attendance and participation in weekly discussions. For each discussion, I will hand out a sheet describing the reading and suggesting several questions for you to focus on. For 6 of the 11 weeks that we meet for discussion, you will hand in a 1 to 2-page reading response (handwritten is ok, typed is preferable) that responds to the questions or presents your own reaction to the readings. The choice of which weeks you do responses for is up to you. Grades will be weighted as follows:

25% each paper (total 75%)

25% discussion & reading responses

If you are a graduate student, you will write a fifteen-page essay on a topic of your choice, worked out in consultation with me. This paper must include treatment of one or more primary sources, and it must also bring relevant secondary literature into consideration. Your grade will be based 60% on the paper, 40% on discussion.

SCHEDULE OF WEEKLY TOPICS AND READINGS

Week 1

Jan. 22 Introduction: Science and Enlightenment
Reading: Outram, *The Enlightenment*, chap. 1

UNIT I: THE INSTITUTIONS OF ENLIGHTENMENT

Week 2

Jan. 27 - Main themes of Enlightenment thought
Jan. 29 - The institutions of Enlightenment
Reading: Outram, *The Enlightenment*, chaps. 2-4.
Kant, "What is Enlightenment?" (to be distributed in class)

Week 3

Feb. 3 - The institutions of Enlightenment (cont.)
Feb. 5 - Popular science in France (Michael Lynn)
Reading: Voltaire, *Philosophical Letters* (packet)
Pope, *Essay on Man* (packet)

Week 4

Feb. 10 - Publishing in the French Academy (Robin Rider)
Feb. 12 - Science in Salon Culture (Mary Terrall)
Reading: Terrall, "Salon, Academy, and Boudoir: Generation and Desire in Maupertuis's Science of Life." (packet)
Maupertuis, *The Earthly Venus* (to be distributed in class)
Feb. 14 (Friday) - Distribution of first writing assignment

UNIT II: FORCE AND MATTER

Week 5

Feb. 17 - The assimilation of Newtonian natural philosophy
Feb. 19 - Force and matter
Reading: None (Workshop on first writing assignment)

Week 6

Feb. 24 - Chemistry: From art to science
Feb. 26 - Lavoisier and the Chemical Revolution
First Writing Assignment Due
Reading: Lavoisier, *The Elements of Chemistry* (packet)
Priestley, *Experiments and Observations on Different Kinds of Air* (packet)

Week 7

March 3 - Polyps and the immortal soul
March 5 - Controversies over spontaneous generation
Reading: Diderot, *D'Alembert's Dream* (packet)
Needham, *Summary of Some Observations on the Generation, Composition, and Decomposition of Animal and Vegetable Substances.* (packet)

Spallanzani, *Tracts on the Nature of Animals and Vegetables*, "Seminal Vermiculi" (packet)

Week 8

March 10 - The subtle fluids

March 12 - Galvani, Mesmer, and the vital fluids

Reading: Benjamin Franklin, various experiments on electricity (packet)

Mesmer, *Dissertation on the Discovery of Animal Magnetism* (packet)

UNIT III: ENLIGHTENMENT CONCEPTS OF SYSTEM AND METHOD

Week 9

March 17 - Philosophy of language in the 17th century

Distribution of Second Writing Assignment

March 19 - Linnaeus and the order of everything

Reading: None (Workshop on second writing assignment)

Week 10

SPRING BREAK

Week 11

March 31 - NO CLASS (Spring Break)

April 2 - Encyclopedism (**Meet in Memorial Lib., 9th floor**)

Reading: d'Alembert, *Preliminary Discourse to the Encyclopedia of Diderot*, all (packet)

Week 12

April 7 - Buffon: From natural history to history of nature

Second Writing Assignment Due

April 9 - Condillac and the origin of language

Reading: Buffon, "Initial Discourse: On the Manner of Studying and Expounding Natural History" (packet)

Condillac, *On the Origin of Human Knowledge* (packet)

UNIT IV: A SCIENCE OF HUMANITY

Week 13

April 14 - The Human animal

April 16 - The human mind: sense and sensibility

Reading: Hume, *Treatise of Human Nature* (packet)

Blumenbach, *On the Natural Variety of Humans* (packet)

Week 14

April 21 - Historical writing in the Enlightenment, I

April 23 - Historical writing in the Enlightenment, II

Reading: Gibbon, *The History of the Decline and Fall of the Roman Empire* (packet)

Robertson, *History of the Discovery and Conquest of America* (packet)

Week 15

April 28 - The comparative study of human society, I

April 30 - The comparative study of human society, II

Distribution of third writing assignment

Reading: Herder, *Reflections on the Philosophy of the History of Mankind* (packet)

Forster, *A Voyage Round the World* (packet)

Week 16

May 5 - The science of statecraft

May 7 - Condorcet and the French Revolution

Reading: None (Workshop on third writing assignment)