

HISTORY OF SCIENCE 324
SCIENCE IN THE ENLIGHTENMENT
Spring, 2002

Instructor: Tom Broman

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Office hours: 2:00 – 3:30 Wednesday, 1:15 – 2:15 Friday

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 Underground Textbook Exchange or on reserve in College Library:

Dorinda 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 15–18 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. 23 - Introduction: Science and Enlightenment

Reading: Immanuel Kant, "What is Enlightenment?" (to be distributed in class)

UNIT I: ENLIGHTENMENT THOUGHT AND ITS SOCIAL SETTING

Week 2 (Jan. 28 – Feb. 1) Main Themes of Enlightenment Thought

Reading: Dorinda Outram, *The Enlightenment*, chaps. 3-4.

Alexander Pope, *Essay on Man* (packet)

Week 3 (Feb. 4 – Feb. 8) The Social World of Enlightenment

Reading: John Locke, *An Essay Concerning the True Original Extent and the End of Civil Government* (packet)

Outram, *The Enlightenment*, chapter 2

Week 4 (Feb. 11 – Feb. 15) Enlightenment, Popularization and the Press

Reading: Voltaire, *Philosophical Letters* (packet)

Joseph Addison, Selections from the *Spectator* (packet)

Week 5 (Feb. 18 – Feb. 22) Encyclopedias and the Collection of Useful Knowledge

Reading: d'Alembert, *Preliminary Discourse to the Encyclopedia of Diderot*, all.

Feb. 22: Distribution of first writing assignment

UNIT II: FORCE AND MATTER

Week 6 (Feb. 25 – March 1) The Assimilation of Newton's Natural Philosophy

Reading: Pierre-Louis Moreau de Maupertuis, *A Dissertation on the Different Figures of the Celestial Bodies* (packet)

Week 7 (March 4 – March 8) Chemistry as an Enlightenment Science

Reading: Antoine Laurent Lavoisier, *The Elements of Chemistry* (packet)

Joseph Priestley, *Experiments and Observations on Different Kinds of Air* (packet)

March 4: First writing assignment due in class

Week 8 (March 11 – March 15) The Forces of Living Matter

Reading: Denis Diderot, *D'Alembert's Dream* (packet)

John Turberville Needham, "Some Observations on the Generation, Composition and Decomposition of Animal and Vegetable Substances." (packet)

Lazaro Spallanzani, "Seminal Vermiculi" (packet)

Week 9 (March 18 – March 22) The Subtle Fluids

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

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

March 22: Distribution of second writing assignment

Week 10 (March 25 – March 29)
Spring Break

UNIT III: PUTTING THE PROPER NAMES TO THINGS

Week 11 (April 1 – April 5) Enlightenment Concepts of System and Order
Reading: Condillac, *Logic* (packet)
Linnaeus, *Critica Botannica* (packet)

April 3: Second writing assignment due in class

Week 12 (April 8 – April 12) From Natural History to the History of Nature
Reading: Buffon, "*Initial Discourse: On the Manner of Studying and Expounding Natural History*" (packet)
Hutton, *Theory of the Earth*

UNIT IV: A SCIENCE OF HUMANITY

Week 13 (April 15 – April 19) Travel and Exploration as Forms of Scientific Practice
Reading: Forster, *A Voyage Round the World* (packet)
Kolb, *Present State of the Cape of Good Hope* (packet)
Outram, *The Enlightenment*, chapter 5

Week 14 (April 22 – April 26) The Comparative Study of Human Society
Reading: Montesquieu, *The Spirit of the Laws* (packet)

Week 15 (April 29 – May 3) The Human Animal
Reading: Condillac, *Treatise of the Sensations* (packet)
Blumenbach, *On the Natural Variety of Humans* (packet)
Outram, *The Enlightenment*, chapter 6

Week 16 (May 6 – May 10) **The Science of Statecraft**
Reading: Outram, *The Enlightenment*, chapter 7–8

