

HISTORY OF SCIENCE/HISTORY 324 SCIENCE IN THE ENLIGHTENMENT Fall, 2007

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Office hours: 1:15 – 3:15 Friday

GENERAL DESCRIPTION

The eighteenth-century Enlightenment was a cultural movement that took the 17th-century Scientific Revolution as the foundation for a new vision of humanity and society. Scientific knowledge, according to the proponents of the Enlightenment, could become the instrument of social and economic progress. Yet the Enlightenment was far more than the mere “application” or “diffusion” of scientific thinking into new areas of European culture. Much more fundamentally, it was during the Enlightenment that many of the leading ideas of modern culture took root, ideas such as “human rights” and individual freedom that remain important today. My aim in discussing these developments is to foster in you a critical understanding of the Enlightenment’s legacies, for both better and worse. We open with an extended review of the social and cultural developments that gave rise to the Enlightenment. After this introduction to the period as a whole, we will consider several of the most important themes that characterized the temper of scientific thinking in the Enlightenment, including the complex relationship between the concepts of “force” and “matter” (a major legacy of Isaac Newton’s natural philosophy), the origins of social theory, the role of travel and contact with other societies in the understanding of human nature, psychology and human knowledge, among other topics.

There are 2 textbooks, available at the Underground Textbook Exchange or on reserve in College Library:

Dorinda Outram, *The Enlightenment* (required)

Thomas Hankins, *Science and the Enlightenment* (recommended)

In addition, there is a packet of xeroxed readings, which is available for purchase in the History of Science office, 7143 Social Science. It costs \$36.00 cash or check, **and there are no refunds!** Once you’ve bought it, it’s yours to keep and cherish forever. A copy of the reading packet is also available on reserve in College Library.

COURSE REQUIREMENTS AND GRADING

Undergraduates

This year 324 will feature two different kinds of assignments. First, you will be asked to write two papers (one about 1650-1800 words in length, the other about 2500–2700) using materials that you will identify and read yourself. These assignments are not meant to be complicated or even very time-consuming introductions to historical research. Instead, my hope is that they will give you a chance to read more in depth about a subject that is of particular interest to you. Although you will receive more detailed instructions about the assignments later, I will describe them briefly here:

The first assignment will direct you to the English scientific journal, the *Philosophical Transactions*, in one particular decade (i.e., the 1730s, the 1740s, and so forth). This journal is

easily available on-line through the web-based digital library known as JSTOR. Your assignment will be to find a theme that was particularly prominent during that decade or part of the decade and describe how scholars wrote about it in the *Phil Trans*. A model of what such a theme might look like is already in your reading packet. It consists of the cluster of articles in the *Phil. Trans.* that followed the announcement of the discovery of the little polyp *Hydra* by Abraham Trembley late in 1740.

The second assignment will have you reading more in depth concerning one of the major themes covered by the course: travel and colonization, Newtonianism, social theory, chemistry, theories of knowledge and the psychology of sensation, and so forth. The basic idea will be that you will be asked to find additional readings to supplement what you already have in the course reader and write about them.

For both of these writing assignments, you will produce drafts and then have them critiqued by writing fellows who have been specially trained by the Writing Center for this kind of work.

Finally, undergraduates will also write two short take-home essay tests based on lectures and readings. Each will be about 1500 words in length. One will be handed out at mid-term and the other at the end of the semester.

Grades will be weighted as follows:

15% for each take-home essay (total 30)%

25% for the first paper

30% for the second paper

15% for class discussion

Graduate Students

My normal expectations for graduate students is that they produce a 5000-6000 word research paper (one based mainly on the use of primary sources) on a topic of the student's choice and worked out in consultation with me. In cases where the student pleads an overload of such exercises, I am willing to substitute a combination of review essays and book reviews. Check with me when you have an idea of what your work load is going to be.

ACCOMMODATION OF STUDENT NEEDS

Extensions to the due date for assignments will only be granted if requested before the due date. Legitimate reasons include religious observances, illness or family emergency or an unusually crammed examination schedule. The untimely death of a laser printer, however beloved it may have been, is not a legitimate reason for an extension.

Additionally, I will make every effort to honor requests for reasonable accommodations made by students with disabilities. If you think you may qualify for such accommodations, contact the McBurney Disability Resource Center at 263-2741 to establish your eligibility. The earlier you make a request, the more easily it can be accommodated, so please do try to plan ahead.

SCHEDULE OF WEEKLY TOPICS AND READINGS

Week 1 Sept. 5 - Introduction: Science and Enlightenment

Reading: Immanuel Kant, "What is Enlightenment?"

UNIT I: THE CULTURE OF ENLIGHTENMENT

Week 2 (Sept. 10 - Sept. 14) The Restoration of Confidence

Reading: Outram, *The Enlightenment*, chapter 2

Voltaire, *Micromegas*

Pope, *Essay on Man* (This is so widely available on the internet that it seemed pointless to put it in the reader. See for example:
(<http://www.theotherpages.org/poems/pope-e1.html>)

Week 3 (Sept. 17 - Sept. 21) The Critical Temper

Reading: Outram, *The Enlightenment*, chapter 3

Montesquieu, *Persian Letters*

Addison, *Spectator*

Voltaire, *Letters on England*

Distribution of first writing assignment on Sept. 17

Week 4 (Sept. 24 - Sept. 28) A Theory of Society

Reading: Locke, "An Essay Concerning the True Original, Extent, and End of Civil Government."

Rousseau, "Discourse on Whether the Restoration of the Sciences and the Arts Has Contributed to the Purification of Morals."

Draft of first writing assignment due on Sept. 26 in class

UNIT II: FORCE & MATTER: THE CONTESTED LEGACY OF NEWTON

Week 5 (Oct. 1 - Oct. 5) The Assimilation of Newton's Natural Philosophy

Reading: Outram, *The Enlightenment*, chapter 4

Desaguliers, *A Course of Experimental Philosophy*

Maupertuis, *A Dissertation on the Different Figures of Celestial Bodies*

Week 6 (Oct. 8 - Oct. 12) The Forces of Living Matter

Reading: Extracts from the *Philosophical Transactions* on the Hydra

La Mettrie, *Machine Man*

Needham, "Observations on the Generation, Composition, and Decomposition of Animal and Vegetable Substances."

Final version of first writing assignment due in class on Oct. 8

Week 7 (Oct. 15 - Oct. 19) The Subtle Fluids

Reading: Franklin, *Experiments and Observations on Electricity*

Mesmer, *Dissertation on the Discovery of Animal Magnetism*

UNIT III: SCIENCE AND THE PRACTICAL ARTS

Week 8 (Oct. 22 - Oct. 26) The Theory and Practice of Chemistry

Reading: Macquer, *Elements of the Theory and Practice of Chymistry*

Bergman, *A Dissertation on Elective Attractions*

Lavoisier, *Elements of Chemistry*

Distribution of second writing assignment in class on Oct. 22 (first take-home essay)

Week 9 (Oct. 29 - Nov. 2) Publicizing Craft Knowledge

Reading: Selections from the *Encyclopédie* (to be distributed in class)

Discussion section on Wednesday this week – no class on Friday

Second writing assignment due in class on Oct. 29

UNIT IV: TRAVELS IN THE EMPIRE OF NATURE

Week 10 (Nov. 5 - Nov. 9) Travel and Exploration as Forms of Scientific Practice

Reading: Outram, *The Enlightenment*, chapter 5

Forster, *A Voyage Round the World*

Kolb, *Present State of the Cape of Good Hope*

Distribution of third writing assignment in class on Nov. 9

Week 11 (Nov. 12 - Nov. 16) The Comparative Study of Human Society

Reading: Montesquieu, *The Spirit of the Laws*

Week 12 (Nov. 19 - Nov. 23) Domesticating Nature's Cornucopia

Reading: Linnaeus, *Critica Botanica*

Discussion section on Wednesday this week (Thanksgiving)

UNIT V: A SCIENCE OF HUMANKIND

Week 14 (Nov. 26 - Nov. 30) Sense, Language and Thought

Reading: Condillac, *Treatise On the Sensations*

Draft of third writing assignment due in class on Nov. 28

Week 13 (Dec. 3 - Dec. 7) Human Unity and Variability

Reading: Outram, *The Enlightenment*, chapter 6

Blumenbach, "On the Natural Variety of Mankind."

Wollstonecraft *Vindication of the Rights of Woman* (to be handed out)

Week 15 (Dec. 10 - Dec. 14) The Limits of Enlightenment

Voltaire, *Candide*

Final version of third writing assignment due in class on Dec. 10

Distribution of final writing assignment (second take-home essay) on Dec. 14

Final writing assignment due on December 20.