

History 180A: History of Life Sciences before Biology (1500-1800)
Winter 2007
MW, 2:00 - 3:15 p.m., Bunche 3211

Prof. Mary Terrall
5276 Bunche
Office Hours: Weds. 10:30-12, Thurs. 1:30-3:00, and other times by appointment
terrall@history.ucla.edu

The life sciences were not unified under the disciplinary rubric of “biology” until the 19th century. This course will explore the many different approaches to the study of life in the centuries preceding this disciplinary coming-of-age. The people involved in these investigations were anatomists, doctors, philosophers, collectors and naturalists, microscopists, instrument makers, and physical scientists. We will follow several interrelated themes through the work of these various individuals. What were the defining features of life and how could they be investigated? Do animals have souls? How do anatomical structures illuminate physiological functions? What are the differences, if any, between the organic and the mechanical? How do living things propagate themselves? How are traits transmitted from one generation to the next? What is the role of divine providence or design in the organic world? Do organic forms change over time? How can we know what is going on beneath the visible surface of living creatures? We will be studying the history of concepts, practices, technologies and institutions as we look at the ways in which these questions were addressed in the past. The time period covered by the course will be Renaissance through the Enlightenment, with more emphasis on the 17th and 18th centuries.

There is no pre-requisite for this course. Lectures form the backbone of the course, supported by the readings. Lectures will not recapitulate the reading; attendance and attention at lectures will be necessary components of the work of the course. There is no textbook that covers this material, so we will be using a selection of primary sources (usually not very long) accompanied by scholarly articles and book chapters.

Reading:

One book is available for purchase at ASCULA bookstore:

Shirley Roe, *Matter, Life and Generation*

All other readings will be posted on the course website, with links from the syllabus. Students will do further reading taken from a supplementary bibliography, according to their interests; these readings will provide material for the final papers (due in exam week). By March 5, everyone must have chosen a topic and started the reading. You must hand in a paper topic with preliminary bibliography and a few sentences about the questions you will explore in the paper by this date.

Assignments and Grading:

Midterm Exam (short answer): 30%

Paper (5-8 pp.): 40%

Final Exam (short-answer): 30%

Topics and readings:

Weeks 1-2 (Jan. 8-17): Introduction; Plato, Aristotle & Galen; Renaissance anatomy

Reading: Galen, *On Anatomical Procedure*

Vesalius, selection from *On the Fabric of the Human Body*

Andrew Cunningham, *The Anatomical Renaissance*, Chap1 (the ancients)

[Cunningham, *Anatomical Renaissance*, Chap. 4 \(Vesalius\)](#)

[Katharine Park, "The Criminal and the Sainly Body," *Renaissance Quarterly* \(1994\)](#)

Week 3 (Jan. 22-24): From the cosmos as organism to the mechanical philosophy

Reading: [Descartes, *Treatise on Man* \(excerpts\)](#)

[Gaukroger, *Descartes's System of Natural Philosophy*, Chaps. 7 & 8](#)

[Ashworth, *A Emblematic natural history of the Renaissance*@](#)

[Paula Findlen, *Natural History*](#)

Week 4 (Jan 29 - 31): Microscopic discoveries; natural theology

Reading: [Edward Ruestow, *The Microscope in the Dutch Republic*, Chaps. 6-8](#)

[Leeuwenhoek, Letter to Royal Society of London on spermatozoa;](#)

[Hooke, *Micrographia* \(excerpt\)](#)

MIDTERM: Monday, Feb. 5 (Short-answer questions, all material in weeks 1-4)

Weeks 5-6 (Feb. 5-14): Theories of generation (preformation, epigenesis, pangenesis); embryology

Roe, *Matter, Life and Generation*, Chaps. 1-6;

[Mauvertuis, *Earthly Venus*](#)

[18th-century Life Sciences](#)

Week 7: (Monday holiday) (Feb. 21): Natural history in 18th century: Observing and Classifying

Reading: [Buffon, "Preliminary Discourse"](#)

[Abraham Trembley, "Natural History of the Freshwater Hydra"](#)

Spary, selections from *Utopia's Garden*, [ch. 1](#), [ch. 3](#)

Week 8: (Feb. 26-28): Enlightenment Vitalism and Animal Electricity

Reading: [Williams, *Cultural History of Medical Vitalism in Enlightenment Montpellier*, \(selection\)](#)

[Broman, "Matter, force and Christianity";](#)

[Bresadola, "Early Galvinism and Technique and Medical Practice"](#)

PAPER TOPICS, WITH BRIEF DESCRIPTION OF SOURCES, DUE MONDAY, MAR. 7

Week 9: (Mar. 5-7): Botany and Empire: Linnaeus and others

Reading: Koerner, ["Carl Linnaeus in his Time and Place"](#);

Stewart, [Global Pillage](#)

Week 10 (Mar. 12-14): Organic form, purpose and change: Lamarck

Reading: [Jordanova, Lamarck](#);

Lamarck, selection from [Zoological Philosophy](#)

FINAL EXAM: Weds. Mar. 14 in class. Short-answer questions, all material in weeks 5-10

PAPERS DUE: Anytime before Tuesday, March 20 at NOON. Turn in papers: [History office, 6th floor, Bunche](#)

Papers must be clearly marked with your name and professor's name.