History of Science in the Modern Age
HIST518

Spring, 1997
Kansas State University - Syllabus

--------------------------------------------------------------------------------

Reading:

Required:

Anthony M. Alioto, A History of Western Science
Bernard Jaffe, Crucibles
Jonathan Weiner, The Beak of the Finch
Richard Rhodes, The Making of the Atomic Bomb
James D. Watson, The Double Helix

Recommended:

Kenneth Korey, The Essential Darwin
Thomas S. Kuhn, The Structure of Scientific Revolutions

I. Introduction to the Course

January 23--Lecture 1: The Ancients [Alioto 1-116].

II. Classical Physics and Astronomy

January 24--Lecture 2: Aristotle and the Great Chain of Being [Alioto 117-177].


January 30--Laboratory 1 Introduction to the Laboratory, Dr. Thomas L. Isenhour.

January 31--Laboratory 2 Classical Physics, Dr. Chris Sorensen, Prof. of Physics.

February 1--Lecture 4: Galileo and the Language of Nature [Alioto 208-222].


February 7--Laboratory 3 Classical Physics, Prof. Sorensen.
February 8--Lecture 6: Space and Time: Newton [Alioto 233-249].

**III. Classical Chemistry and Electricity**

February 13--Lecture 7: The Age of Scientific Revolution

February 14--Laboratory 4: Classical Physics, Prof. Sorensen.

February 15--Lecture 8: The Enlightenment and the Idea of Progress [Alioto 262-279].


February 21--Laboratory 5 Classical Chemistry, Prof. Isenhour.

February 22--Lecture 10: The Chemical World of Berzelius, Avogadro, Mendeleev, and Arrhenius [Jaffe 100-128; 150-180].

February 27--Lecture 11: Foundations of Organic Chemistry--Woehler, Berzelius, and Pasteur [Jaffe 129-149; Alioto 312-332].

February 28--Hour Exam; Laboratory 6 Classical Chemistry

**IV. Natural History (Classical Geology and Taxonomy)**

February 29--Lecture 12: Time is Everything--Foundations of Natural History [Alioto 280-281].

March 5--Lecture 13: Natural History and Classical Geology [Alioto 293-302].

March 6--Laboratory 7 Classical Geology, Dr. Ronald West, Prof. of Geology.

**V. Classical Biology**

March 7--Lecture 14: Darwin, Origin of Species [Korey 57-228; Weiner begin].

March 12--Lecture 15: The Beak of the Finch [Weiner entire].

March 13--Laboratory 8 Classical Biology

March 14--Lecture 16: Darwinism in America

March 19--Lecture 17: Origins of Social Science: Marx and Freud

March 20--Laboratory 9 Classical Biology, Dr. John Zimmerman, Prof. of Biology.
March 21--Lecture 18: The Structure of Science Revolution- Kuhn [Kuhn].

March 25-29--no classes Spring Vacation

April 2--Lecture 19: 19th Century Physics - Electromagnetism

April 3--Laboratory 10 Classical Biology, Prof. Zimmerman.

VI. The Atomic and Molecular Era

April 4--Lecture 20: 19th Century Physics - Thermodynamics and Kinetics [Alioto 333-349].

April 9--Hour Exam

April 10--Lecture 21: Radioactivity and Atomic Structure [Alioto 350-375; Jaffe 181-217; Rhodes 13-53].

April 11--Lecture 22: Radioactivity and Atomic Structure [Jaffe 218-264; Rhodes 53-275].

April 16--Lecture 23: Relativity and Uncertainty [Alioto 376-399; Rhodes 279-442].

April 17--Laboratory 11 Atomic Energy

April 18--Lecture 24: The Making of the Atomic Bomb [Jaffe 265-307; Rhodes 443-678].


April 24--Laboratory 12 Atomic Energy

April 25--Lecture 26: A New Understanding of Life [Alioto 400-430.]

VII. The Chemical and Biological Revolution

April 30--Lecture 27: The Chemical Bond, Prof. Isenhour. Watson begin.

May 1--Laboratory 13 Ecology of the Konza Prairie

May 2--Lecture 28: The Double Helix, Prof. Isenhour [Watson entire].

May 7--Lecture 29: The New Ecology [Alioto 431-443].
May 8--Laboratory 14 Ecology of the Konza Prairie

May 9--Lecture 30: The Frontiers of Modern Science

History of Science in the Modern Age

Send comments and questions to jackholl@ksu.edu

This page was modified and is maintained by Jim Ehrman and Susannah Bruce of the History Department's Online History Project.