

SCIENCE IN THE TWENTIETH CENTURY--A HISTORICAL OVERVIEW

Book List (University Bookstore)

Barbara Cline, Men Who Made a New Physics
Banesh Hoffmann, Albert Einstein: Creator and Rebel
James D. Watson, The Double Helix, ed. Gunther S. Stent
Larry Gonick & Mark Wheelis, The Cartoon Guide to Genetics, updated ed.
Robert Jungk, Brighter than a Thousand Suns
Timothy Ferris, The Red Limit, 2nd ed.

Reading Selections

For Part I: Cline, Ch. 1-4, 6-11, 13
Hoffmann, Ch. 1-7

For Part II: Watson, pp. ix-145, 153-157, 185-194, 200-207, 213-218
Gonick & Wheelis, selections (to be announced)
Jungk, Ch. 1-13
Hoffmann, Ch. 9

For Part III: Hoffmann, Ch. 8, 11, (12)
Ferris, Ch. 1-5, (6), 7
Jungk, Ch. (14-18), 19-20; Epilogue

Exams

Midterm I: 5:30-7:00 p.m., Monday, October 7

Midterm II: 5:30-7:00 p.m., Monday, November 18

Final: 12:25 p.m., Monday, December 16

History of Science 203: Science in the Twentieth Century--A Historical Overview

3 Credits; Z(Humanities or Social Studies)

2 hours lecture (1:20 MW, 5231 Social Science), 1 hour discussion

Prerequisites: None

Instructor: Mr. Siegel

Major themes in the physical and biological sciences
in the twentieth century, with attention to:

- * conceptual development in science
- * interaction of science and society
- * philosophical issues in science
- * personalities in science

Lecture Outline

I. The Second Scientific Revolution (1890-1930)

- A. Introductory
- B. Chance Discovery and the Rise of Atomic Science, 1895-1915
- C. The Theory of Relativity, ca. 1905
- D. The Evolution of Quantum Theory, 1900-1930
- E. The New World-View, 1920-1940

II. The Double Helix and the Bomb (1900-1960)

- A. Classical Genetics, 1860-1920
- B. Toward Molecular Biology, 1920-1960
- C. Energy--Cosmic and Nuclear, 1900-1930
- D. Enrico Fermi and Nuclear Fission, 1930-1940
- E. Ernest Lawrence and the Big Machines, 1930-1950
- F. Mobilizing Science for War, 1939-1942
- G. Robert Oppenheimer and the Bomb, 1940-1950

III. New Horizons (1900-1980)

- A. Toward a New Cosmology
- B. Science and Society in the Post-War Period
- C. New Directions for Science

Course Requirements

Two midterm exams plus final; some informal writing for discussion section.

NOTE: Upper division, graduate, and honors students might consider Hist. Sci. 538 as an alternative.