

HISC 107: The Emergence of Modern Science

Winter 2012

Professor Tal Golan

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Lecture, place and time: WLH 2207, Tu Th, 12:30 – 1:50 pm
Office Hours: Tu 11:30-12:30 (or by appointment), H&SS 4044

Week 1:

Meeting 1 (Jan 10) Introduction

Reading: http://en.wikipedia.org/wiki/History_of_science

Meeting 2 (Jan 12) Young Newton goes to college

Reading: Debus, pp. 1-15, 74-115

Week 2:

Meeting 3 (Jan 17) The Newtonian Synthesis

Reading: Westfall, pp. 25-42, 105-119, 139-158; Newton's excerpts

Meeting 4 (Jan 19) Enlightened science

Reading: Hankins pp. 1-45

Week 3:

Meeting 5 (Jan 24) The Experimental Philosophy

Reading: Hankins, pp. 46-80

Meeting 6 (Jan 26) Chemistry

Reading: Hankins, pp. 81-112

Week 4:

Meeting 7 (Jan 31) The Science of Life

Reading: Hankins, 113-157

Meeting 8 (Feb 2) The Science of Man

Reading: Hankins, 158-190

Week 5:

Meeting 9 (Feb 7) The Industrial Revolution

Reading: Dorn, 23-58

Meeting 10 (Feb 9) Natural Theology

Reading: Paley, Natural Theology, excerpts

Week 6:

Meeting 11 (Feb 14) Mid term test

Meeting 12 (Feb 16) Nineteenth Century physics - the mechanical synthesis

Reading: Purrington, pp. 32-74

Week 7:

Meeting 13 (Feb 21) Thermodynamics

Reading: Purrington, pp. 75-112

Meeting 14 (Feb 23) Evolution

Reading: Bowler 1-49

Week 8

Meeting 15 (Feb 28) Darwin and Darwinism

Reading: Coleman 57-91

Meeting 16 (Mar 1) Medicine and Public Health

Reading: TBA

Week 9:

Meeting 17 (March 6) Biological Determinism: Race, Gender, and more

Reading: TBA

Meeting 18 (March 8) Psychology - the Science of the Soul

Reading - TBA

Week 10

Meeting 18 (Mar 13) Fin-De-Siecle science – Growing Uncertainties

Reading: John Heilbron, Fin-de-siecle physics

Meeting 19 (Mar 15) What have we learned?

Course Policies

- All submitted work must be your own.
- Computer are allowed but should be used for class purposes only. If I think it distracts you (or me), I will ask you to turn it off.
- Weekly commentaries on the assigned readings
 - The students will comment on the assigned readings before each meeting.
 - The comment should be short, not longer than half a page.
 - The comments will be checked but not graded.
 - No late commentaries will be accepted.
 - If you fail three times (or more) to put in a commentary, you lose the commentary's grade contribution.

Grading

- **Weekly commentaries** %10
- **Mid-term exam** 45%:
- **Final exam** 45%:

Bibliography

Required Books (available for purchase at UCSD Bookstore)

- Hankins, Thomas L., *Science and the Enlightenment* (Cambridge UP, 1985)
- Coleman, William, *Biology in the Nineteenth Century* (Cambridge UP, 1977)
- Purrington, Robert, D., *Physics in the Nineteenth-Century* (Rutgers UP, 1997)

All other readings will be posted on the course web site