

ILS 201: Western Culture: Science, Technology, and Philosophy, I
History of Science 201: The Origins of Scientific Thought

SYLLABUS, FALL 2005

Instructor: Lindberg. TAs:

Course Format:

Two lectures (50-75 minutes) and one discussion section (with a teaching assistant) per week. Lectures will begin at 1:05, rather than the scheduled 1:00, in 3650 Humanities.

Course Requirements and Grading:

Attend all lectures and discussion sections (don't even consider missing one!); weekly reading. Grading will be based on three take-home essays, weekly (or nearly so) quizzes or other exercises in discussion section, and discussion section participation. TAs will supply further details.

Nature and Purpose of the Course:

This is a "meets with" course: History of science 201 and Integrated Liberal Studies (ILS) 201 meet in the same room at the same time. The former carries Humanities [H] breadth credit; the latter carries Natural Science [N] credit. This may seem a weird arrangement, but let me assure you that it isn't. The course examines the development of the natural sciences in their human context, revealing the pursuit of scientific knowledge as a human activity, in dialogue with intellectual, religious, institutional, and social contexts. The course will cut a narrow swath through human culture from Greek antiquity to the end of the 17th century, tracing the classical scientific tradition as it developed from Plato and Aristotle, through the Middle Ages, to Copernicus, Galileo, Kepler, and Newton – but always with an eye on philosophy, religion, and the institutions of learning.

Important Note Regarding L&S Breadth Credit (**please read in full**):

As noted just above, History of Science 201 conveys **Humanities (H) credit** towards the Letters and Science breadth requirement. ILS 201 conveys **Natural Science (N) breadth credit**. Since you have already enrolled in one of these courses, you have chosen which kind of credit you want. If you weren't paying attention when you registered and wish to switch breadth credit, the only way to do it is to switch courses (which also means switching discussion sections). If there are no openings when you dial in, keep dialing; there is always a fair bit of switching and dropping in the first few weeks of the course.

Materials to Purchase:

David C. Lindberg, *THE BEGINNINGS OF WESTERN SCIENCE*. (University Book Store)
A course book of supplementary materials, available from Bob's Copy Shop (**University Square, intersection of University Avenue and Lake Street, only**): Contains course outlines, primary sources, secondary readings, study questions, review sheets, time lines, and illustrations. You can't get along without it.

Materials on Reserve (College Library, Helen White Hall):

Thomas Kuhn, *THE COPERNICAN REVOLUTION*.

See next page for schedule of lecture topics and assigned readings:

Schedule of Lecture Topics and Assigned Readings:
(Figures and Documents are in the Reader.)

1. **The Beginnings of Greek Philosophy** (Sept. 6, 8).
Required: Lindberg, pp. 1-35; Document 1 (Early Greek Thought)
Recommended: Document 2 (Parmenides on Being and Non-Being).
 2. **Plato's World of Forms** (Sept. 13).
Required: Lindberg, pp. 35-45; Document 3 (Plato's Allegory of the Cave).
 3. **Aristotle's Philosophy of Nature** (Sept. 15, 20).
Required: Lindberg, pp. 47-77; Documents 4, 5, and 6.
Recommended: Lindberg, pp. 77-83.
 4. **Ancient Astronomy** (Sept. 22, 27).
Required: Lindberg, pp. 85-105; Figures 1-6 (reader); Document 7.
Recommended: Lindberg, pp. 105-10.
 5. **The Migration of Greek Science** (Sept. 29).
Required: Lindberg, pp. 133-82, 203-6; Document 8 (and accompanying map).
 6. **Medieval Universities** (Oct 4).
Required: Lindberg, pp. 183-213.
 7. **The Christian Reception of Pagan Learning** (Oct. 6, 11).
Required: Lindberg, pp. 190-97 (for review), pp. 215-44; Document 9.
- Pass out first take-home essay questions about Oct. 11.**
8. **The Medieval Science of Motion** (Oct.13, 18).
Required: Lindberg, pp. 58-62 (for review), pp. 290-307; Document 10.
Recommended: Lindberg, pp. 307-15.
 9. **The Copernican Revolution** (Oct. 20, 25).
Required: Document 11; Lindberg, pp. 245-80; Figures 1-7 (reader).
Recommended for those who want or need a fuller exposition: Kuhn, Copernican Revolution, pp. 133-200 (on reserve).
 10. **The Reception of Heliocentrism** (Oct. 27).
Required: Document 12; fig. 8 (reader).
 11. **Kepler's Invention of a New Heliocentrism** (Nov. 1, 3).
Required: Documents 13, 14; Figures 9-10 (reader).
 12. **Galileo's Defense of Heliocentrism** (Nov. 8).
Required: Documents 15, 16, 17.
 13. **Galileo and the New Mechanics** (Nov. 10, 15).
Required: Documents 18, 19, 20, 21, and (for review) 10.

Pass out second take-home essay questions about Nov. 15.

14. **The Organic View of Nature and the Epistemology of Skepticism** (Nov. 17).

Required: Document 22.

15. **Rene Descartes and the Mechanical Philosophy** (Nov. 22, 29).

Required: Documents 23, 24, 25, 26, 30.

16. **Pierre Gassendi and Atomism** (Dec. 1)

16. **Mechanics in the 17th Century** (Dec. 6).

Required: Document 27.

17. **Newton's Cosmic Triumph?** (Dec. 8, 13).

Required: Documents 28, 29.

18. **Was the "Scientific Revolution" a Repudiation or an Outgrowth of Medieval Science?**