

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

SYLLABUS, FALL 2000

Instructor: Lindberg. TAs: Andrews, Kundert, Nelson, Sandman

Course Format:

Two lectures (50-75 minutes) and one discussion section (with a teaching assistant) per week.

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 in discussion section, and discussion section participation. TAs will supply further details.

Honors Students: honors paper or project (see TA for details).

Required texts:

David C. Lindberg, **THE BEGINNINGS OF WESTERN SCIENCE.**

Stephen Toulmin and June Goodfield, **THE FABRIC OF THE HEAVENS.**

A course packet of supplementary materials, available from Bob's Copy Shop (University Square only): Course outlines, primary sources, secondary readings, study questions, review sheets, time lines, and illustrations.

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

Thomas Kuhn, **THE COPERNICAN REVOLUTION.**

Schedule of Lecture Topics and Assigned Readings:

- 1. Early Greek Cosmology and Philosophy (Sept. 5, 7).**
Required: Lindberg, pp. 1-35; document 1 (Early Greek Thought)
Recommended: Toulmin & Goodfield, pp. 52-79; document 2 (Parmenides on Being and Non-Being).
- 2. Plato's World of Forms (Sept. 12).**
Required: Lindberg, pp. 35-45; document 3 (Plato's Allegory of the Cave).
- 3. Aristotle's Philosophy of Nature (Sept. 14, 19).**
Required: Lindberg, pp. 47-77; summary sheets 1, 2, and 3. Recommended: Lindberg, pp. 77-83; T&G, pp. 93-105.
- 4. Ancient Astronomy (Sept. 21, 26).**
Required: Lindberg, pp. 85-105; figs. 1-6 (reader); summary sheet 4.
Recommended: Lindberg, pp. 105-110.

5. **The Migration of Greek Science** (Sept. 28).
Required: Lindberg, pp. 133-182, 203-206; summary sheet 5 (and accompanying map).
6. **Medieval Universities** (Oct. 3).
Required: Lindberg, pp. 183-213.
7. **The Christian Reception of Pagan Learning** (Oct. 5, 10).
Required: Lindberg, pp. 190-97 (for review), pp. 215-244; summary sheet 6.
8. **The Medieval Science of Motion** (Oct. 12, 17).
Required: Lindberg, chap. pp. 58-62 (for review), pp. 290-307; summary sheet 7.
Recommended: Lindberg, pp. 307-315; T&G, pp. 213-17.
9. **The Copernican Revolution** (Oct. 19, 24).
Required: T&G, pp. 169-80; Lindberg, pp. 245-280; figs. 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. 26).
Required: T&G, pp. 182-89; fig. 8 (reader).
11. **Kepler and the Transformation of Heliocentrism** (Oct. 31, Nov. 2).
Required: T&G, pp. 198-209; summary sheet 8; figs. 9-10 (reader).
12. **Galileo's Defense of Heliocentrism** (Nov. 7).
Required: T&G, pp. 189-98; document 7 ("Galileo's Defense of Copernicanism"); document 8 (Galileo's Letter to the Grand Duchess); document 9 (Trial of Galileo); summary sheet 8.
13. **Galileo and the New Mechanics** (Nov. 9, 14).
Required: T&G, pp. 210-27; summary sheets 7, 10-11; document 11 (Galileo's Scientific Method).
14. **The Organic View of Nature in the Renaissance** (Nov. 16, 21).
Required: Document 7 (The Organic View of Nature).
15. **Descartes, Gassendi, and the Mechanical Philosophy** (Nov. 28, 30, Dec. 5).
Required: Document 8 (The Mechanical Philosophy); document 9 (Cartesian Mechanical Philosophy); summary sheets 12, 13, and 14.
16. **Mechanics in the 17th Century** (Dec. 7).
Required: Summary sheet 15.
17. **Newton and the Triumph of the Modern World View** (Dec. 12, 14).
Required: T&G, pp. 228-49; summary sheet 16.