

Foundations of the Modern Worldview (PHIL 3500)

FALL '07

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Course Website: <http://homepages.wmich.edu/~zpd7026>. The remainder of the syllabus is here.

Course Description

Contemporary science attempts to understand nature and its inner workings from a particular perspective, sometimes termed 'the *scientific world-view*.' This perspective is associated with a particular method of research involving physical experimentation, the extensive use of mathematics, and a continuous appeal to a particular set of variables (time, distance, mass, etc.) the relations between which are supposed to exhaust all that can be legitimately known about the world. It also places a high premium on the first-person perspective, rational inquiry, and objective facts. In this course, we will examine the evolution of the scientific perspective from Greek antiquity to the Scientific Revolution of the 17th century. We will see that modern science and the scientific world-view emerged from the interactions of several traditions of thought, some of which, like the magical tradition, seem completely at odds with modern science. We will begin with an overview of ancient Greek ideas in philosophy, medicine, and cosmology. We will then look at how these Greek ideas were recovered and adapted, almost 2000 years later, during the Renaissance. The last portion of the course will focus on the profound intellectual transformations in Europe during the 17th century.

You will do a *significant* amount of reading for each class.

Course Goals:

By the end of the course, you should:

- gain a broad understanding of the scientific and philosophical development of Western Civilization.
- be able to describe differences and similarities between mechanistic, organic, and magical/mystical forms of thinking.
- discuss in detail particular scientific and philosophical arguments for and against the theories we will study.
- characterize the "scientific method".
- describe how features of modern science were developed in reaction to mystical ways of thinking.

Assignments and Grading:

- Grades will be based on participation (5%), attendance (10%) and 6 quizzes (14% each).
- Quizzes will be given roughly every other Thursday at the beginning of class (see schedule for quiz dates). They will test material from the previous weeks of lectures and readings and consist of short answer questions. They are not cumulative. The quizzes count for a tremendous portion of your grade, so it is in your interest to prepare for them adequately. Since each quiz covers only a small portion of the course, it is a doable task, but in order to do it you must attend *all* classes, do *all* the readings, and take good notes during lectures.

Other Policies:

Make-ups: make-up quizzes or exams will only be allowed under special circumstances. If you are in such circumstances, please provide the relevant documentation. If you know ahead of time that you won't be able to attend a particular class meeting, let me know immediately. In general, the earlier you contact me, the more forgiving I will be and the easier it will be to schedule a make-up exam. Don't wait till the last minute, or worse, till *after* the quiz/exam.

Attendance policy: You are allowed *one unexcused absence*. After that, your participation grade will suffer. If you have a problem and must miss class, please inform me as soon as you can, in advance if possible.

Academic Integrity: Students are expected to follow Student Code of Conduct regarding academic integrity and honesty. Definition of academic honesty violations can be found at <http://www.osc.wmich.edu/academichonesty/definitionsofviolations.html>. Cheating and plagiarism *will not be tolerated*. Be aware that culling material from web sources is extremely easy to discover.

Special Accommodations: If you have a disability that requires special testing accommodations or other classroom modifications, please notify both me and the office of Disabled Student Resources and Services as soon as possible. The office of Disabled Student Resources and Services can be found at Disability Resources and Services can be found at <http://dsrs.wmich.edu/> or (269) 387-2116.

Religious Observances: The university's religious observances policy (MOA-07/02) states that students "who must be absent from scheduled classes to fulfill religious obligations or observe practices associated with their faith not be disadvantaged. However, it is the student's responsibility to make arrangements with his/her instructors in advance. It is in the student's best interests to approach each instructor expeditiously and with sufficient notice that the rights and responsibilities of the instructor are not disrupted." It is *your* responsibility to check the class meeting schedule and inform me of possible observance conflicts at least 3 weeks before the observance date.

Required Readings:

All readings for the course will be either available directly on the course website:

<http://homepages.wmich.edu/~zpd7026> in the section titled "Readings", or linked from that section. This website is NOT a part of Blackboard or WebCT. If any set of readings is not already there, they will be uploaded in a timely manner. All the reading will be in the form of either free web-pages or password-protected PDF files. To open PDF files you'll need Acrobat Reader (at <http://www.adobe.com>) or similar product (Apple Preview, Skim, etc.). The PDF password is **modernworldview**. If you have any trouble downloading or opening the files, email me immediately. It is **your responsibility** to contact me in a timely manner (i.e., not the day before the reading is due) if you have any such trouble.

Schedule and Readings:

Sept. 6: Introduction

Sept. 13: Pre-Socratics Plato and the Atomists

Readings Due:

- 1) Chapter 2 of David Lindberg's *The Beginnings of Western Science* (University of Chicago Press, 1992). On Website.
- 2) Selection's from Plato's *Timaeus*. On website.
- 3) Epicurus: "Letter to Herodotus". On <http://www.epicurus.net/en/herodotus.html>.

Sept. 20: Aristotle (and Quiz)

Readings Due:

- 1) Chapter 3 of David Lindberg's *The Beginnings of Western Science* (University of Chicago Press, 1992). On Website.
- 2) Aristotle, *Physics*, Book II, Ch. 1 – 3: <http://classics.mit.edu/Aristotle/physics.html>
- 3) Aristotle, *Physics* Book IV, Chapter 1, 2, 5: <http://classics.mit.edu/Aristotle/physics.html>
- 4) Aristotle *On the Heavens*, Book I, chs. 2-3: <http://classics.mit.edu/Aristotle/heavens.1.i.html>

Sept. 27: Ancient Medicine and Galen

Readings Due:

- 1) Hippocratic text "Airs, Waters, Places": Parts 1, 2, 11. On <http://classics.mit.edu/Hippocrates/airwatpl.html>.
- 2) Hippocratic text "On the Sacred Disease": first 10 paragraphs (stop at "Of little children"). On <http://classics.mit.edu/Hippocrates/sacred.html>.
- 3) "Galen", from the *Internet Encyclopedia of Philosophy*: <http://www.iep.utm.edu/g/galen.htm>

Oct. 4: Plotinus, Hermes, and Transmission of Knowledge (and Quiz)

Readings Due:

- 1) "Plotinus", from the *Stanford Encyclopedia of Philosophy*: <http://plato.stanford.edu/entries/plotinus/> Sections 1 and 2 only.
- 2) Chapter One of Frances Yates' *Giordano Bruno and the Hermetic Tradition*. On Website.

Oct. 11: Ficino, Pico

Readings Due:

- 1) Pico Della Mirandola: Oration On the Dignity Of Man. http://www.wsu.edu:8080/~wldciv/world_civ_reader/world_civ_reader_1/pico.html .
- 2) Paul Oskar Kristeller, *Eight Philosophers of the Italian Renaissance*, Ch. 4: Pico. On Website
- 3) Marsilio Ficino: Chapter 3 of Paul Kristeller, *Eight philosophers of the Italian Renaissance*. On Website.
- 4) Marsilio Ficino, *The Book of Life*, (a)-(p) <http://people.bu.edu/dklepper/RN242/marsilio.html>

Oct. 18: Paracelsus and Bruno (and Quiz)

Readings Due:

- 1) Secondary literature on Paracelsus
http://www.nlm.nih.gov/exhibition/paracelsus/paracelsus_2.html
http://www.nlm.nih.gov/exhibition/paracelsus/paracelsus_3.html
http://www.nlm.nih.gov/exhibition/paracelsus/paracelsus_4.html

Oct. 25: Ptolemy, Copernicus, Kepler

Readings Due:

- 1) Selection from Ptolemy's *Almagest* (from M.K. Munitz, *Theories of the Universe*). On website.

- 2) Chapter 6 of *Fabric of the Heavens*. On Website.
- 3) Chapter 3 of I.B. Cohen's *Birth of a New Physics*. On Website
- 4) Chapter 6 of I.B. Cohen's *Birth of a New Physics*. On Website.

Nov. 1: Galileo (and Quiz)

Readings Due:

- 1) Chapter 5 of I.B. Cohen's *Birth of a New Physics*. On Website.
- 2) Selection from Galileo's Assayer:
<http://www.philosophy.leeds.ac.uk/GMR/hmp/texts/modern/galileo/assayer.html>

Nov. 8: Descartes

Readings Due:

- 1) Descartes's *Discourse on Method*. Parts I-IV.
<http://www.mala.bc.ca/~johnstoi/descartes/descartes1.htm>
- 2) Selection from Descartes' *The World*: Chap. 1-2, 6, 8. (The link is to a longer text, be careful not to print out the whole thing). <http://www.princeton.edu/~hos/mike/texts/descartes/world/world.htm>

Nov. 15: Boyle, Mechanism, & the Reaction of the Cambridge Platonists (and Quiz)

Readings Due:

- 1) Selection from Boyle, *The Excellency and Grounds of the Corpuscular or Mechanical Philosophy* (from M. Mathews, *The Scientific Background to Modern Philosophy*). On Website.
- 2)

Nov. 29: Newton

Readings Due:

- 3) Chap. 9 *Fabric of the Heavens*. On Website.

Dec. 6: Extra Class (and Quiz)

Readings will be announced in class.

Dec. 13: Final Quiz

Note different meeting time: 7:15PM - 9:15PM.