History of Science to the Age of Newton
HSCI 3013.010
MW 10:30-11:20 a.m.
PHSC 224

Section 011  Section 013
Th 1:30-2:20  Fr 10:30-11:20
PHSC 356  PHSC 223

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Course Description:
This course explores understandings of the natural world from antiquity to the 18th century. We will explore what people in the past knew about nature as well as why they were interested in nature. Throughout we will ask: What are the different ways that people in the past understood the natural world? How did they explain such phenomena as the motions of the planets, the growth of plants and the workings of the human body? And what motivated people to investigate the natural world? Further information and many of the course readings are available on-line at D2L (learn.ou.edu).

Course Requirements:
Quizzes: You must complete an on-line quiz on the material from the lecture and readings each week (except weeks 1, 6 and 11). This must be completed BEFORE your discussion section (either by 1:00 p.m. Thursday or 10:00 a.m. Friday). These "quizzes" are open-note and open-book, and you are free to talk with one another about them, but once you start a "quiz" you only have 20 minutes to complete it. Your lowest quiz score will be dropped. Participation: Your informed participation in the discussion sections (on Thursdays or Fridays) is required. Discussions are based on the assigned reading, so you must complete this reading before you come to class. Attendance is mandatory. Exams: The first midterm exam is on February 25/26, and includes material covered between January 20 and February 24. The second midterm exam is on April 8/9, and includes material covered between March 1 and April 7. The final is on May 11 and is comprehensive. Papers: You will write two 5-page research essays on assigned topics. There are three assigned topics with individual deadlines, of which you will pick two. The first assigned topic is due February 19, the second March 26, and the third April 30.
Note:
Please use your OU email account, or arrange for email to be forwarded from that account to the one you use. This will ensure that you receive course-related emails. I encourage you to check the course web site regularly for announcements and reminders about paper deadlines and exam dates.

Required Texts:
The following texts are available at the University Bookstore,
- Michael J. Crowe, *Theories of the World from Antiquity to the Copernican Revolution*
- Maurice A. Finocchiaro (ed. and trans.), *The Essential Galileo*
- Jeffrey Burton Russell, *Inventing the Flat Earth*
- Barbara Duden, *The Woman Beneath the Skin*

All other readings are available on-line.

Grading Policy:
- Midterm: 30% (15% each)
- Weekly quizzes: 10%
- Participation: 10%
- Research paper: 30% (15% each)
- Final exam: 20%

Schedule:

**PART I: The Heavens**

**Week 1**
Jan 20. Introduction

Jan 21/22. Discussion: Anaximander's Cosmos

**Week 2**
Jan 25. Lecture: Greek Astronomy
Reading: Crowe, *Theories of the World*, chapters 1-2

Jan 27. Lecture: Greek Astronomy
Reading: Crowe, *Theories of the World*, chapters 3-4

Jan 28/29. Discussion: Thinking Like A Greek Astronomer

**Week 3**
Feb 1. Lecture: Medieval Cosmology
Reading: Crowe, *Theories of the World*, chapter 5

Feb 3. Lecture: Medieval Cosmology
Feb 4/5. Discussion: Astronomy and the Bible in the Middle Ages
   Reading: Nicole Oresme, "The Compatibility of the Earth's Diurnal Rotation with Astronomical Phenomena and Terrestrial Physics" (on-line)
   Nicole Oresme, "The Possibility of a Plurality of Worlds" (on-line)

Week 4
Feb 8. Lecture: The Copernican Revolution
   Reading: Crowe, *Theories of the World*, chapter 6

Feb 10. Lecture: Galileo
   Reading: Crowe, *Theories of the World*, chapter 9

Feb 11/12. Discussion: Astronomy and the Bible in the 17th Century

Week 5
Feb 15. Lecture: Tycho and Kepler
   Reading: Crowe, *Theories of the World*, chapters 7-8

Feb 17. Lecture: Kepler and Newton

Feb 18/19. Discussion: World Systems

RESEARCH PAPER #1 DUE FEBRUARY 19 AT 5:00 P.M.

Week 6
Feb 22. Lecture: Astrology

Feb 24. Lecture: Calendars and Time

Feb 25/26. MIDTERM #1

PART II: The Earth

Week 7
Mar 1. Lecture: Terrestrial Physics

Mar 3. Lecture: Terrestrial Physics
   Reading: John Buridan, excerpts from *Questions on the Eight Books of the Physics* (on-line)

Mar 4/5. Discussion:
Week 8
Mar 8. Lecture: Geography

Mar 10. Lecture: Exploration

Mar 11/12. Discussion: Historical Error
   Reading: Jeffrey Burton Russell, *Inventing the Flat Earth*

SPRING BREAK (March 13 – 21)

Week 9
Mar 22. Lecture: Animals
   Reading: Pliny "Elephant," from *Natural History* (on-line)
   Anon., "Elephant" from *The Book of Beasts* (on-line)

Mar 24. Lecture: Animals
   Reading: Robert Hooke, *Micrographia*, excerpt (on-line)

Mar 25/26. Discussion: Renaissance Animals
   Reading: William B. Ashworth, Jr., "Natural History and the Emblematic World View" (on-line)

RESEARCH PAPER #2 DUE MARCH 26 AT 5:00 P.M.

Week 10
Mar 29. Lecture: Alchemy
   Reading: Hermes Trismegistus, "The Emerald Table" (on-line)

Mar 31. Lecture: Alchemy
   Reading: Paracelsus and Isaac Newton, excerpts (on-line)

Apr 1/2. Film: "Newton's Dark Secrets"

Week 11
Apr 5. Lecture: Plants

Apr 7. Lecture: Plants
   Reading: John Gerard, *Herbal*, excerpt (on-line)
   Levinus Lemnius, *An Herbal for the Bible*, excerpt (on-line)

Apr 8/9. MIDTERM #2

Part III. The Human Body

Week 12
Apr 12. Lecture: The Four Humors
   Reading: Hippocrates, "The Nature of Man" (on-line)

Apr 14. Lecture: Body and Soul
   Reading: Galen, "The Hand" (on-line)

Apr 15/16. Discussion: Body and Soul
   Reading: Caroline Walker Bynum, "The Female Body and Religious Practice in the Later Middle Ages" (on-line)
   Katherine Park, "The Criminal and the Saintly Body: Autopsy and Dissection in Renaissance Italy" (on-line)

Week 13
Apr 19. Lecture: Epidemics (leprosy and syphilis)
   Reading: Jordan of Turre, "The Symptoms of Lepers" (on-line)
   Ulrich von Hutten, "Of the Beginning of the French Pox" (on-line)

Apr 21. Lecture: Epidemics (plague)

Apr 22/23. Discussion: Responses to plague
   Reading: Daniel Defoe, Journal of the Plague Year, excerpt (on-line)

Week 14
Apr 26. Lecture: Gender

Apr 28. Lecture: Sex and Procreation

Apr 29/30. Discussion: Gender and Generation
   Reading: Reading: Duden, The Woman Beneath the Skin, preface (v-viii) and chapter 4 (pp. 104-184)

RESEARCH PAPER #3 DUE APRIL 30 AT 5:00 P.M.

Week 15
May 3. Lecture: Anatomy

May 5. Lecture: Anatomy

May 6/7. Film: "William Harvey and the Circulation of the Blood"
   OPTIONAL Reading: Andrew Wear, "The circulation of the blood" (on-line)

Final Exam: Tuesday, May 11, 8:00 – 10:00 a.m.