HSCI 3813: Science in the ancient world, Fall 2011

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Class meets MW from 3.00 to 4.15 p.m. in PHSC 359

Vestiges of the Western scientific tradition can be seen in the ancient world. In classical Greece there arose a new way of looking at nature. Thinkers came up with non-mythological, rational explanations. They developed mathematics as a discipline and applied it to some natural phenomena. Still, these new ideas arose in a culture and society completely different from our own. Consequently, Greek "science" had a different character and different aims from what one might expect from a modern point of view. One might well ask why, in those different circumstances, such ideas made any sense at all.

In this course we will discuss both aspects. On the one hand, we will point out the many important (important, that is, from a modern point of view) results of ancient researchers in mathematics, astronomy, natural history, etc. On the other hand, we will discuss the very un-modern outlook these people often had on nature and the natural world. Although we will primarily focus on Greek thinkers, we will also pay some attention to other geographic regions. The fields covered will be medicine, the mathematical sciences (including astronomy), and natural philosophy. The best way to understand the outlook of the ancient thinkers is by reading their own works. Course readings will for a large part consist of translations of primary sources. The course therefore is not just about the content of ancient science, but also about making sense of those ancient texts.

General rules
Everyone is expected to keep up with the reading schedule and to participate in class discussion of the reading. Exams (including essays) are given both over the assigned readings and over the information the instructor gives in class. If the students have missed a class, it is their responsibility to find out what has been taught or announced.

It is the policy of the university to excuse the absence of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. Please see me in advance. Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so that we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

Assessment
There are 500 points to be earned in this class, in the following way:
first (short) essay: 50 points
essay 2-4, hundred points each: 300 points
final examination: 100 points
class participation: 50 points

The course is not so much about facts, but about making sense of the ideas as put forward by the ancient authors. The students have to show that they have understood the texts, memorising them is not sufficient. Examination is by essay or open-book exam.

A student may ask the instructor for one extra essay assignment, to replace an earlier essay. (This does not apply if no serious effort has been made in the first place.) During the course, some quizzes will be given. Students who turn in less than 2/3 of the answers satisfactorily will not receive the 50 points for class participation.

Course readings
Books required for the course are:

The following texts are on D2L:
- Plutarchus, Life of Marcellus, chapter 14-19.
- Boëtius, Consolation of philosophy
Some (shorter) readings may be handed out during the course.

Reading schedule (the schedule may be subject to modifications during the course).

Week 1. Introduction, beginnings of philosophy

Aug 22  Introduction

24  Thales, Anaximander, Xenophanes: Barnes, xxv-xxxv, 3-17, 40-47.

Week 2-4. Pre-Socratic philosophers


31  Parmenides, Melissus, Zeno: Barnes 77-108

Sept 5  (Labor day, no class)

7  Empedocles: Barnes, 111-161; First (short) essay due

12

14  t.b.a. (absence of instructor)

Week 5-7. Ancient medicine

19  Oath, canon, tradition in medicine: Lloyd, 67-86
    Second essay due

21  Asclepius; Sacred disease, regimen: Lloyd, 186-205, 237-251

26  Nature of man; airs, waters, places: Lloyd, 148-169, 260-271
    Alcmaeon: Barnes, 36-39

28  Epidemics, prognosis, aphorisms: Lloyd, 87-138, 170-185, 206-236

Oct 3  Unschuld, Medicine in China

5

Week 8. General Greek philosophy, 4th century BC
10 Aristophanes, Clouds; Third essay due

12

Week 9. Plato

17 Plato, from Republic
19 Plato, from Timaeus

Week 10. Epicurus and Greek atomism

26 Lucretius

Week 11-12. Aristotle, Stoa

31 Aristotle, Physics

Nov 2 Aristotle, On the heavens
7 Aristotle, On animals
9 Diogenes Laertius, from Life of Zeno.

Week 13-14. Greek mathematics, Alexandrian science

14 Hero, Pneumatics. Roller, *Eratosthenes' Geography.* Fourth essay due

16

21 Plutarch, Life of Marcellus.
23 (Thanksgiving holiday, no class)

Week 15. Science in late antiquity

28 pseudo-Aristotle, De mundo
30 Boëthius, Consolation

Week 16. Finals preparation week

Dec 5, 7 t.b.a.