HSCI 3813: Science in the ancient world, fall 2016

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Physical Science Building 606
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The class meets on Tuesday and Thursday from 3.00 to 4.15 p.m. in Physical Science Building 402.

Introduction

Greek antiquity made important contributions to the understanding of the natural world. The works of Aristotle, Archimedes, or the Hippocratics are generally regarded as important stepping-stones to our present scientific worldview. At the same time, we have to acknowledge that these ideas arose in a world very different from our own and that the goals that the Greeks pursued in most cases have very little to do with the ideals of modern science.

In order to understand how this rise of a more scientific attitude happened, we cannot limit ourselves to studying the contributions (in the fields of medicine, astronomy, natural history, etcetera) that are still considered valid. The Greeks were not looking for solutions to given scientific problems. They were formulating new kinds of questions. How could a modern scientific outlook emerge in a world that was far from modern?

In this course, you will get some understanding of the ancient ideas (in particular on medicine, mathematics, and nature generally), how they differed from ours, and how they still played an important role in the development of western science. We will do so mostly by reading translations of works by ancient authors, as this is the best way to get some sense of both the modernity and the strangeness of the ancient thinkers. Moreover, a scholarly treatment requires to explain not just what we know, but also how we know it. Reading and interpreting the sources is therefore an integral part of the course.

Some general rules

Everyone is expected to attend lectures, to keep up with the reading schedule, and to participate in class discussion of the reading. The information given during class lecture is vital for understanding the readings. If the students have missed a class, it is their responsibility to find out what has been taught or announced.

Messages will be sent to your OU email account. If you do not use that account normally, please arrange for emails to be forwarded from that account to the one you use.

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.
As a matter of course, students are to abide by the rules of academic integrity; see http://integrity.ou.edu/students.html. More details will be given with the first essay assignment.

**Evaluation**

In this course, you are not asked to memorize facts. Assessment will be by take home essays or open book exams. Essay assignments will normally require that you analyze some of the course readings with the help of the information provided in the course lectures. That is, you are not supposed to look for outside sources. You have to demonstrate that you are able to make sense of the course readings and explain them in their relevant context.

There are 500 points to be earned in this class, in the following way:

- Three essays, 100 points each: 300 points
- Final exam: 100 points
- Class participation, quizzes: 100 points

Students can redo one essay if they feel they have performed below their capabilities. This does not apply if no serious effort has been made in the first place.

Quizzes will normally be assigned over the reading for the next meeting and have to be turned in in writing before that class begins. Unless otherwise stated, they will count for ten points each. Although there will be more than ten quizzes, 100 points is the maximum. If students turn in more quizzes, the ten highest will count.

**Course readings**

The following two books are required for this class:

A number of other texts have been posted on D2L:

Some short readings may be handed out during the course.

*Reading schedule.* The schedule is open to modification.

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<tr>
<th>Aug</th>
<th>Introduction</th>
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<tbody>
<tr>
<td>23</td>
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<tr>
<td>25</td>
<td>Barnes, xcv-xxxv, 1-27, 40-47</td>
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Week 2-5: ancient medicine

<table>
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<tr>
<th>Sept</th>
<th>Lloyd 67-69, 139-147 (Oath, canon, science of medicine)</th>
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<tr>
<td>1</td>
<td>Lloyd 87-138, 170-185 (Epidemics, prognosis)</td>
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<tr>
<td>6</td>
<td>Lloyd (regimen, dreams, aphorisms)</td>
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<td>8</td>
<td>Lloyd 70-86, 148-169, 260-271 (Nature of man; tradition in medicine; airs, waters, places); Barnes 36-39 (Alcmaeon)</td>
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<td>13</td>
<td>Galen, Constitution of medicine</td>
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<td>15</td>
<td>Unschuld, Medicine in China</td>
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Week 6-8: the mathematical sciences
27  Asper, Two cultures; Euclid; FIRST ESSAY DUE
29  Barnes 28-35, 162-181 (Pythagoreans); Levin, Manual of harmonics

Oct 4  Plato, Republic; Timaios.
6   Plutarch, from Life of Marcellus; Hero, Pneumatics
11  Planetary models: http://people.sc.fsu.edu/~dduke/models.htm
13

Week 9-14: the problem of change
18  Barnes, 77-108 (Parmenides, Melissus, Zeno)
20  Barnes, 48-73 (Heraclitus)
25  Barnes, 111-161 (Empedocles) SECOND ESSAY DUE
27  Barnes, 185-198 (Anaxagoras)

Nov 1  Aristophanes, Clouds
3   Barnes 201-253 (Leucippus, Democritus); Epicurus, Letter to Herodotus
8   Aristotle, Physics
10  Aristotle, On animals; Lloyd, 347-351 (heart)
15  Aristotle, Meteorology
17
22  Diogenes Laërtius on Zeno; THIRD ESSAY DUE
24  (Thanksgiving holiday, no class)
30  TBA

Dec 1  TBA
6   (finals preparation period)
8   (finals preparation period)