This course is a team-taught graduate survey of the history of early science, intended to broaden and deepen the content presented in HSCI 3013 and to introduce you to advanced historiography that relates to the pre-modern period. You will encounter both classic work in the discipline as well as more recent viewpoints. The goal is to provide you with a working knowledge of the basic “canon” of topics and historiographic issues in the pre-modern period, and an awareness of the broad array of themes and content that constitute the larger web of connections in thinking about the history of early science, technology and medicine. In reaching this goal you will be better prepared to undertake such tasks as building your own bibliographies for further study and research and better prepared to serve as a teaching assistant in the undergraduate survey at a later date, due to a fuller knowledge of the historical background and historiography.

Instructors
Peter Barker 5-2242 barkerp@ou.edu; Kathleen Crowther 5-2247 kcrowther@ou.edu; Steven Livesey 5-6490 slivesey@ou.edu, Kerry Magruder 5-2741 or 5-1823 kmagruder@ou.edu; Rienk Vermij 5-5416 rienk.vermij@ou.edu

Course Mechanics
3013 Component: All students in this 5990, in so far as they have not followed an undergraduate survey in the history of science earlier, are expected to be directly involved in one of the sections of 3013 offered this semester, either as an actively auditing student or as a course GTA. The professor for the 3013 class you take will specify the exact nature of your obligations to that course. At a minimum, you should expect to be required to attend the lectures and discussions and to do the readings. Some faculty may ask you to do weekly homework assignments or to take quizzes and exams as well; others may not.
Weekly 5990 Seminar: For the most part, the course will meet weekly as a seminar. Students are expected to turn in a short writing assignment or other work at the discretion of the instructor, for each week that has assigned reading. The various instructors will give you specific instructions on how they want the assignments to be made. Typically, they will expect an analytical essay of approximately 750-1000 words on the focal readings for that week, which definitely should go beyond a mere summary. Some instructors may expect you to provide elements for an analytical discussion, other may give you a specific question on which to focus. In any case, instructions will be forwarded in class or via email prior to your need to prepare the assignment. If there remains anything unclear, please contact the respective instructor in time.
For more general issues, regarding the process, structure or logistics of the course, you may contact Dr. Vermij, who will act as the overall coordinator for the course. Feel free to contact him by email (rienk.vermij@ou.edu), telephone (325-5416), or in person (PHSC 606).

Grading: Your grade for the course will be determined by all five participating faculty. It will depend upon both your writing assignments and your participation in the weekly discussions, with the writing assignments being weighted more heavily.
Readings: For the required reading, as far as it is not available online, we will seek to place copies of texts owned by OU on reserve in the Collections. If articles are part of the required reading we will either scan the material and post it on the D2L site for the course or place copies on a designated shelf in PHSC. We do this as a convenience for you, and in recognition of the costs of course materials. We do urge you to consider buying course materials and other relevant works so as to build up your private professional library. Sources such as amazon.com often offer discounted prices for new texts and access to used copies; bookstores such as abe.com, alibris.com, bookfinder.com, and especially AddAll.com (which searches more than forty online book consortia) are also helpful sources for used books.

Note: seminar participants are urged to establish collaborative use rules for reserve readings so that all members of the class have equal access to the materials. This is especially important in the days prior to the deadlines for written materials.

Course meeting times: The regular meeting time will be Thursday 3:00 – 5:00 pm, except for August 23, when the seminar will meet at 2.30 p.m. (till 5:00), and on September 27 and November 8, when the seminar will meet 2:00 – 4:00 pm. All meetings will be in the Harlow Room of the History of Science Collections, Bizzell Library, 5th Floor.

Course schedule:

**August 23**
1. Introductory meeting, attended by all instructors.
2. Cultures of ancient science (Dr. Livesey).
Reading:

**August 30.** Aristotle: Physics, Cosmology, Biology (Dr. Livesey)
Reading:

**September 6. Science in medieval universities (Dr. Livesey)**

Read for background:
- Hilde de Ridder-Symoens ed., *A History of the University in Europe, I, Universities in the Middle Ages* (Cambridge: Cambridge UP 1992). Read especially chapters 1-2; browse Parts II (‘Structures’) and III (‘Students’) for sections of individual interest; the five chapters in Part IV (‘Learning’) will be distributed among five students in the class.

Focal reading:

**September 13. Medieval Medicine (Dr. Crowther)**

Read for background:

Focal reading:

**September 20. Alchemy (Dr. Crowther)**

Reading:
**September 27.** (N.B. Meetings starts at **2.00 p.m.**) The Anatomical Renaissance (Dr. Crowther)

Reading:

**October 4.** Astronomy and cosmology (Dr. Vermij)

Focal reading:

Background reading:
This is a short article, but in order to understand what Leoninus’ theory is all about, you will need some background reading (probably quite a lot). Please try to find it yourself. As for technical details, an old, but still usefull overview is J.L.E. Dreyer, *A History of Astronomy from Thales to Kepler* (second edition, New York ca. 1953).

**October 11.** Seventeenth-century mechanical philosophy (Dr. Vermij)

Focal reading:

This is an important article, but in order to grasp its full meaning, you may have to look up some basic information, e.g. about Descartes' specific contribution. On the mechanical philosophy, some background is offered by Margareth Osler, *Divine Will and the Mechanical Philosophy. Gassendi and Descartes on Contingency and Necessity in the Created World* (Cambridge 1994). Descartes' most pertinent work is his *Principia Philosophiae*.

**October 18.** Scientific instruments (Dr. Vermij)

Background reading:

Focal reading:

**October 25.** Islamic Science (Dr. Barker)

Read for background:

Focal reading:

**November 1.** Astrology (Dr. Barker)
Background reading:
Focal reading:

**November 8.** (N.B. Meeting starts at **2.00 p.m.**) Scientific illustrations (Dr. Barker)
Focal reading:
- Kathleen M. Crowther and Peter Barker, ‘Training the Intelligent Eye: Understanding Illustrations in Early Modern Astronomy Texts’, manuscript to be provided as PDF file.

**November 15.** Books, Printing and the Sciences (Dr. Magruder)
Reading:

**November 22 -** Thanksgiving holiday, no class

**November 29.** Theories of the earth (Dr. Magruder)
Background reading:
Focal readings: