

HPS 2502
History of Science I (03.1)
J. E. McGuire

TIME: Wednesday, 5:00 – 7:25 PM

LOCATION: Cathedral of Learning, G28

As a single term survey of approximately two thousand years of intellectual history, HPS 2502 cannot hope to be comprehensive. Rather, our aim will be to learn some of the skills of reading, analyzing and interpreting historical texts by studying a selection of important achievements in natural inquiry from the Classical Greeks to the Renaissance. The course director will regularly call on other faculty who are specialists on specific topics to introduce us to those topics. Throughout, it should be kept in mind that a major goal of this course is the development of the skills and techniques of the historian.

GRADING POLICY:

Your overall grade will be based on an evaluation of your weekly performance in seminars during the terms, and on three assigned papers. for HPS graduate students only, there will be an exam at the end of the term. Attendance is mandatory. **Papers will be due: October 16, November 6, and December 4, 2002.**

REQUIRED TEXTS:

Ackrill, J.L., A New Aristotle Reader, Princeton Univ. Press, 0691929434
Euclid, The Elements, Vol. I, Dover Publications, 486600882
Lloyd, G.E.R. (ed), Hippocratic Writings, Penguin, 0140444513
Galen, Three Treatises on the Nature of Science, (R. Walzer/M. Frede, trans), Hackett, 091545928
Conford, F.M., Plato's Timaeus, MacMillan Lib. of Liberal Arts, 00232551905
Lindberg, David C., The Beginnings of Western Science, Chicago, 0226482316
Lindberg, David C., Science in the Middle Ages, Chicago, 0226482332
Drake, S., Discoveries & Opinions of Galileo, Doubleday, 0385092393, A94

These texts will be supplemented by articles and books available either on reserve in Hillman Library or for photocopying in the HPS Department.

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<u>DATE</u>	<u>TOPIC</u>	<u>PRIMARY READINGS</u>
August 28	Course Introduction:	The Question of The Beginning of Science.
Sept. 4	Hippocratic Medicine	<u>Hippocratic Writings</u> : Lloyd's Introduction pp 9-60. Tradition in Medicine, pp70-86. Epidemics I.i.-ii., pp 87-94. The Sacred Disease, pp. 237-244. The Nature of Man, pp. 260-271.
Sept. 13	Plato	<u>Timaeus</u> : sections 3,4,5,14-23
Sept. 18	Aristotle I. Phil of Nature/Cosmology (Lennox)	Ackrill, pp. 93-100; 106-113;127-142.
Sept. 25	II. Zoology/Philosophy of Science (Lennox)	Ackrill, pp. 50-54; 218-232;241-252.
Oct. 02	Greek Astronomy (Machamer)	<u>Almagest</u> : Book I, 1-8; Book III <u>The Exact Sciences in Antiquity</u> Neugebauer, pp. 97-138.
Oct. 09	Greek Mathematics (Manders)	<u>Elements</u> : Heath's Introduction, Chapters 1-4, 9-11, Book I
Oct. 16	The Ancient Atomists: atomism in Islam in the middle ages	<u>The Presocractic Philosophers</u> Chapter XV, pp. 406-429
Oct. 23	Greek & Islamic Science in the Latin West: the trans- mission of learning	<u>Science in the Middle Ages</u> Lindberg Chapter 2
Oct. 30	Medieval Optics (Machamer)	<u>Science in the Middle Ages</u> Lindberg, Chapter 10
Nov. 06	Medieval Science of Motion	<u>Science in the Middle Ages</u> Murdoch/Sylla, Chapter 7 <u>The Beginning of Western Science</u> , Lindberg, Ch. 12, pp/ 292-307
Nov. 13	The Universities	<u>Science in the Middle Ages</u>

		Lindberg, Chapter 4 <u>The Beginnings of Western Science</u> Lindberg, Chapter 9
Nov. 20	Medieval Cosmology and Astronomy	<u>Science in the Middle Ages</u> Grant, Ch. 8, Pederson, Ch. 9
Nov. 27	THANKSGIVING BREAK	
Dec. 4	Galileo (Machamer)	Drake, S. (selections) <u>Dialogue</u> (selections) <u>Science in the Middle Ages</u> Pederson, Ch. 9 <u>De Revolutionibus</u> (selections)

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HISTORY OF SCIENCE CORE I

Professor Ted McGuire

Fall Term 03-1

PAPER TOPICS due October 16, 2002

Aristotle and Greek Biology

1. Physics II. 1-3 provides a general theory of the 'sources and causes of change'. Outline that general theory, and discuss a specific explanation of Aristotle's in light of that outline.
2. Outline Plato's theory of the construction of the elemental traces into the four primary bodies. Your answer should consider the causes, necessity, the forms, the mathematical, the principle of the best, and the demiurgos.
3. Compare and contrast the main lines of argument in Tradition of Medicine and the Nature of Man.
4. In Parts of Animals I.1 (640b5ff.) and Physics II.8, Aristotle objects to explanations of biological phenomena by his predecessors. Specify the nature of his predecessor's explanations and Aristotle's objections to them. Evaluate the strength of these criticisms.

HISTORY OF SCIENCE CORE I

Professor Ted McGuire

Fall Term 03-1

PAPER TOPICS due Wednesday, December 4, 2002

- 1) Discuss the historical significance of the transmission of Greek/Islamic science into the Latin West.
- 2) Discuss the historical significance for early modern science of the rise of the universities.
- 3) Discuss the main positions in Medieval optics.
- 4) Discuss three important contributions of Copernicus to the rise of modern science.