

Magic, Medicine and Science
106 Lawrence Hall
University of Pittsburgh
Fall 2019

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Description Science is the result of a long process of formation starting in Antiquity and culminating in the late seventeenth century with the so-called Scientific Revolution. Before the Scientific Revolution science, magic and medicine were strongly related. This course examines the historical processes by which science became an independent sphere of human endeavor in the Western world.

We will be especially focused on the emergence of a distinctive *scientific* method as opposed to, say, philosophical or religious or magical methods of acquiring knowledge of nature. Historians and philosophers agree that a distinctive feature of modern science is its use of experience and, especially, experimentation to acquire knowledge. But this feature conflicts with the supposedly bookish orientation of pre-modern “natural philosophers,” who shared the prejudice of the elite of their times against manual work. This conflict creates a puzzle concerning the social origins of the experimental method. Guiding questions we will be asking in this course are therefore: Where did the experimental method come from? What social actors contributed to its development? How important were empirical contributions to the emergence of modern science, relative to theoretical contributions? Who were the main actors in the Scientific Revolution? Were they mainly individuals, or groups? What social, as opposed to merely intellectual, processes drove the revolution? Were there winners and losers in the “revolution?”

This course satisfies the ‘Historical Analysis’ general education requirement.

Required Texts

- Clifford D. Conner. (2005). *A People’s History of Science*. Nation Books. [Conner]
- **All other additional required readings will be made available over Courseweb. [Courseweb]

Recommended Texts

- Dear, P. (2009). *Revolutionizing the sciences: European knowledge and its ambitions, 1500-1700*. 2nd ed. Princeton. eBook available through Pitt.
- Kearney, H. (1971). *Science and change, 1500-1700*. McGraw-Hill. Courseweb; several hard copies available through Pitt ULS.
- Smith, P. (2004). *The body of the artisan: art and experience in the Scientific Revolution*. University of Chicago Press. E-book available from Pitt ULS.
- Federici, S. (2004). *Caliban and the witch: women, the body and primitive accumulation*. Courseweb; hard copy on reserve at Hillman.
- Harkness, D. (2007). *The Jewel house: Elizabethan London and the Scientific Revolution*. Yale University Press. E-book available through Pitt ULS.

Grading 50% Exams (2 x 25% each)
25% Final paper (5 pages, guidelines to be provided later in the course)
25% Participation

Participation will be evaluated through homework. Though the homeworks will not be corrected, students are expected to complete them, bring a paper copy with them to class and *be prepared to discuss them in class*. The assignments will be collected at the end of each class and assessed by me. I will grade the homework as a contribution to the participation grade according to (1) its degree of completion, (2) whether an honest effort has been made to answer the questions and (3) your willingness to share what you wrote in classroom and inter-peer discussions.

Note that a paper copy is required unless you have approached me beforehand about your absence (see “Late Work” below). You are allowed to miss one reaction paper without an excuse.

Homework Please consult the syllabus for each week’s assignments.

On most weeks, there will be two readings, one from Conner and the other from a primary source. Students will be expected to write an approximately 1-2 page (double-spaced) reaction paper to each reading for that week. A good way—but not the only way!—to write a reaction is to give a one paragraph summary of the point of the author, on which you intend to comment, followed by a one paragraph comment on that point. Examples of types of comments include criticisms, questions, or expansions on the author’s point. In all cases, you should use the reaction papers to develop your thoughts and writing for the final paper.

Here are some examples of topics you could try to address in your reaction papers:

- Are you convinced by Conner’s interpretation of the historical episode(s) presented in the reading? If yes, why do you find it persuasive? If not, what might be wrong with the interpretation?
- What do you find especially impressive or surprising about the scientific contributions made by the historical actors described by Conner? Why?
- Can you relate the historical episodes in the reading to contemporary developments in science or technology, perhaps in your own major?
- Creative writing: Write a story about something in the reading based on your personal experience.
- Do you agree or disagree with Descartes’/Paracelsus’/Bacon’s view of how knowledge should be acquired? If you agree, why do you find it compelling? If you disagree, what is wrong with the view? Keep in mind that these authors were especially concerned with achieving *certain*, indisputable knowledge. Do you think their methods are successful in this?
- Do you agree or disagree with the relative weight placed by Descartes/Paracelsus/Bacon on the role of reason versus experience (or experiment) in acquiring knowledge? Why? Feel free to draw on your personal experience in answering.
- Do you agree or disagree with Descartes’/Paracelsus’/Bacon’s attitude towards book learning, or the authority of earlier thinkers (like Aristotle)? Feel free to draw on your personal experience in answering—for example, what role do books and authority have in your own learning process? Should they have this role? Why or why not?

Misconduct and Plagiarism Plagiarism and other forms of academic misconduct will not be tolerated. If you commit an act of plagiarism you will fail the course and will be reported to central administration. Are you unsure about what is plagiarism? Look at plagiarism.org.

Late Work If you are having trouble finishing the work on time, contact me before the due date and we can discuss arrangements and penalties for late work. Unless serious misfortune befell you, I will not accept late work if you don’t approach me beforehand.

Date	Topic	Reading Due	Homework Due
Aug 26	Course introduction		
Aug 28	What science? What history? What people?	Conner Acknowledgments and Chapter 1, pp. xi-22	Reaction to Conner
Sep 2	LABOR DAY		
Sep 4	Blue-water sailors and the navigational sciences	Conner 190-209	Reaction to Conner
Sep 9	Descartes, <i>Discourse on Method</i> , 1st Part	Courseweb Descartes 3-10	Reaction to Descartes
Sep 11	Blue-water sailors and the navigational sciences	Conner 210-228	Reaction to Conner
Sep 16	Descartes, <i>Discourse on Method</i> , 2 nd and 4 th Parts	Courseweb Descartes 11-19, 27- 33	Reaction to Descartes
Sep 18	Blue-water sailors and the navigational sciences	Conner 228-241	Reaction to Conner
Sep 23	NO CLASS		
Sep 25	Descartes, <i>Discourse on Method</i> , 5 th Part	Courseweb Descartes 34-48	Reaction to Descartes
Sep 30	Who were the revolutionaries in the Scientific Revolution?	Conner 248-266	Reaction to Conner
Oct 2	Descartes, <i>Optics</i> , First Discourse	Courseweb Descartes 65-74 (in <i>Discourse on method</i> file)	Reaction to Descartes
Oct 7	EXAM 1		

Oct 9	Who were the revolutionaries in the Scientific Revolution?	Conner 267-285	Reaction to Conner
Oct 14	Who were the revolutionaries in the Scientific Revolution?	Conner 285-303 <i>Optional: E-book Harkness, Jewel House “From the Jewel House to Salomon’s House” (on Plat and Bacon)</i>	Reaction to Conner OR Reaction to Harkness
Oct 16	Paracelsus, <i>Seven Defensiones</i>	Courseweb Paracelsus 10-20	Reaction to Paracelsus
Oct 21	Who were the revolutionaries in the Scientific Revolution?	Conner 303-321 <i>Optional: E-book Smith, Body, pp. 82-106 (on Paracelsus and Palissy)</i>	Reaction to Conner OR reaction to Smith
Oct 23	Paracelsus, <i>Seven Defensiones</i>	Courseweb Paracelsus 20-29	Reaction to Paracelsus
Oct 28	Who were the revolutionaries in the Scientific Revolution?	Conner 321-336	Reaction to Conner
Oct 30	Paracelsus, <i>Seven Defensiones</i> (end) and <i>Diseases that Deprive Man of his Reason</i>	Courseweb Paracelsus 37-41, 142-147, and 167-172	Reaction to Paracelsus
Nov 4	EXAM 2		
Nov 6	Who were the winners in the Scientific Revolution?	Conner 349-369 <i>Optional: Courseweb Federici, Caliban, “The Great Witch-Hunt in Europe,” pp. 163-186, 200-206</i>	Reaction to Conner OR reaction to Federici
Nov 11	Who were the winners in the Scientific Revolution?	Conner 369-387	Reaction to Conner
Nov 13	Bacon, <i>The New Organon</i> Final paper guidelines	Courseweb Bacon “Preface to the ‘Great Renewal’” 6-13, 33-36 (aphorisms I-XX)	Reaction to Bacon
Nov 18	Who were the winners in the Scientific Revolution?	Conner 387-405	Reaction to Conner
Nov 20	Bacon, <i>The New Organon</i>	Courseweb Bacon 37-43 (XXI-XLVI), 57-61 (LXX-LXXIV)	Reaction to Bacon

Nov 25 &
27

THANKSGIVING RECESS

Dec 2	Who were the winners in the Scientific Revolution?	Conner 405-412 Courseweb Bacon 102-110 (I-X)	Reaction to Conner OR Bacon
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Dec 4	1. Bacon, <i>The New Organon</i> 2. Final paper workshop	Courseweb 61-69 (LXXV-LXXXIV), 80-82 (XCVIII-CI), 96 (CXXIV)	Reaction to Bacon
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Dec 10	FINAL PAPER DUE		
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