

[Phil 145](#)

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Philosophy of Science

What is science and what distinguishes it from 'pseudoscience'? What is the 'scientific method', if there is any, and on what basis can it claim to ensure the objectivity of scientific results? How does science explain our observations and experiences? Does scientific knowledge progressively grow in a linear fashion or is its evolution dominated by radical revolutions? Are the scientists' grounds for rejecting an old idea and for replacing it with a novel theory completely rational and logically reconstructible or are they substantially influenced by irrational factors? Do scientific theories give literally true accounts of the world as it is, or should we regard even the most elaborate and well-confirmed theory merely as a useful tool to systematize our experience?

These questions concerning the nature of science will be studied in this class. Our overall approach will be topic-oriented rather than historical. Occasionally, however, we will delve into pertinent episodes in the history of science or of the philosophy of science, or into a non-technical discussion of scientific theories.

Course Materials

Course materials such as lecture notes, handouts, etc will be made available as they will be used in class. It should be noted that I am currently revamping this course as we now use the textbook by Rosenberg (I used a different textbook before). Upon popular demand, I will no longer use slides comprehensively, but allow for some free discussion in class. For the course materials following the old textbook and for comprehensive slides for previous instantiations of this course, see the [course webpage I used in Fall 2011](#).

- [Topic 0: Organization of course](#)
- [Topic 1: Introduction: A brief history of philosophy of science](#)
- [Topic 2: Demarcating science vis-à-vis pseudoscience](#)

Paper prompt:

- Short paper topics (due 8 November 2012)
- Grading rubric

Information concerning plagiarism and guides on how to write a smashing philosophy paper can be found in the sidebar of the [top page of the teaching section](#). The leaflet concerning plagiarism is absolutely **mandatory reading**.

The following materials are mandatory for this course:

- Book: Alexander Rosenberg, *Philosophy of Science: A Contemporary Introduction*, Routledge, third edition 2012. This book is \$39.95 (new) or \$30.00 (used) at the Price Center bookstore.
- A number of readings for this course are available from e-reserves: [Link to this course's e-reserves page](#) (the password for this course is 'cw145')

Note: please ignore the page reference for the article by Hempel for 11 October given in the syllabus and read his entire (short) essay as you find it on the e-reserves page.

The following articles are mandatory reading from the [Stanford Encyclopedia of Philosophy \(SEP\)](#), edited by Ed Zalta:

- James Woodward: [Scientific explanation](#) (only Section 2 for 11 October and Section 5 for 23 October)
- John W Carroll: [Laws of nature](#)
- William Talbott: [Bayesian epistemology](#)

Additional Readings and Materials

Note: These additional materials will not be tested in exams. They serve to give you some background or to offer some additional food for thought.

The [Stanford Encyclopedia of Philosophy \(SEP\)](#) is an excellent source for academically serious, yet relatively accessible survey articles on many, many topics in philosophy, including philosophy of science. For this course, the following articles are relevant:

- Thomas Uebel: [Vienna Circle](#)
- John Vickers: [The problem of induction](#)
- Stephen Thornton: [Karl Popper](#)
- Alexander Bird: [Thomas Kuhn](#)
- John Preston: [Paul Feyerabend](#)
- Helen Longino: [The social dimensions of scientific knowledge](#)
- Elizabeth Anderson: [Feminist epistemology and philosophy of science](#)
- David Papineau: [Naturalism](#)
- James Joyce: [Bayes`s theorem](#)
- Richard Boyd: [Scientific realism](#)

A relatively new, but outstanding, source of very accessible material to many issues covered in this class are the [Philosophy Bites](#) podcasts of top philosophers interviewed by David Edmonds and Nigel Warburton. They are absolutely **free**. So next time you ride to school, make sure to upload some of them beforehand to your iPod! Relevant for this class are for example:

- [Edward Craig - What is Philosophy?](#) (Edward Craig, editor of the Routledge Encyclopedia of

Philosophy and author of *Philosophy: A Very Short Introduction* gives an interesting angle on the nature of philosophy, how it relates to other kinds of thinking, and what makes good philosophy good.)

- [Helen Beebee on Laws of Nature](#) (What is a law of nature? Just a generalisation from experience? Or something different? Helen Beebee investigates these questions in this episode of the Philosophy Bites podcast.)
- [David Papineau on Scientific Realism](#) (Do subatomic particles really exist? Or are they convenient fictions that explain observable phenomena? David Papineau discusses arguments for and against scientific realism in this episode of Philosophy Bites.)
- More to come...

Grading Comments

I will post grading comments here.



• Syllabus

- [Link to syllabus in PDF format](#)

• Office hours

- Tuesdays from 2 to 4pm in 8047 HSS

• News

- o 25 September 2012:

Syllabus available (final)

The final version of the syllabus for this course is now available at the link provided above.

- o 9 September 2012:

Syllabus soon available

The syllabus for this course will soon be available at the link provided above.

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