

Syllabus

PHILOSOPHY OF SCIENCE: CORE CONTEMPORARY ISSUES

(MA-level, elective, 2cp)

Description

The way science works raises deep and pressing philosophical questions. Is there a way to demarcate science from non-science? How is scientific knowledge made reliable? Is it giving us access to reality or is it merely a tool for successful prediction? The so-called “analytic” project (following Barker & Kitcher’s terminology) within philosophy of science focused on these and similar (by now) classic issues: the demarcation of science, confirmation, realism, the nature of theories, their relations to each other, laws of nature and explanation. During the second half of the 20th century, the contingencies of history of science and the intermingling of science and society were increasingly taken seriously: What follows philosophically from looking at the history of science, in particular the study of scientific revolutions? If social values influence sciences, is that legitimate? In which sense, if any, is science itself social and political, and therefore normative?

Part I will introduce the classic issues and then focus on the more contemporary issues regarding history, value-ladenness and social structure of science. Part II and III will focus on the kinds of knowledge sciences produce, by discussing specific epistemic goals of scientists (i.e., explanation, modeling and prediction, and classification) and specific epistemic values in the background of scientific endeavors (i.e., unity, simplicity and objectivity).

By taking a philosophical stance, students will learn in this course how to think about sciences in a philosophical manner – that is, about science in general, but also regarding their respective own disciplines. They shall understand how particular sciences function epistemically and how they fit into their broader academic and social context.

Learning goals, format, deliverables, requirements, and grading

Learning goals: Students will

- get an introduction to the philosophy of science that connects philosophy of science with science studies more generally,
- learn to understand and appreciate the nature of philosophical problems,
- critically look at their discipline’s goals, practices and kinds of knowledge produced thereby.

Format and deliverables: Part I will have lectures and discussions, based on Barker and Kitcher’s (2013) introduction and will close with a short test. Part II and III will concentrate on short primary readings and further material from the other readings. These parts will consist of short student presentations and intensive discussions.

Requirements: Students can join even if they have not previously done a basic introduction to philosophy of science. Students are required to prepare the required reading for class, to regularly and actively participate in class, to take the short test after Part I and to present a topic of their choice (10 min presentation, 1000 word essay).

Grades will be based on the test (40%), 1000 word essay (40%), in class participation (20%).

Overview

I. Major issues in philosophy of science

1. Introduction (B&K, Ch. 1)
2. The analytic project (B&K, Ch. 2)
3. The view from the sciences (B&K, Ch. 3)
4. Science, history, and society (B&K, Ch. 4)
5. Critical voices (B&K, Ch. 5)
6. Science, values, and politics (B&K, Ch. 6)

II. Epistemic goals of science

7. Causal, functional, and structural explanation
8. Modeling and prediction
9. Classification and kind thinking, biological and social

III. Influence of epistemic values

10. Unity
11. Simplicity
12. Objectivity

Readings

Introduction to the philosophy of science:

- [B&K] Barker, G., & Kitcher, P. 2013. *Philosophy of science: A new introduction*. Oxford: Oxford University Press. [required reading for Part I]

Classical and contemporary readings

- Biagioli, M. 1999. *The science studies reader*. New York: Routledge
- Bird, A. & J. Ladyman. 2013. *Arguing about Science*. London; New York: Routledge.
- Curd, M. & J. A Cover. 1998. *Philosophy of Science: The Central Issues*. New York: W.W. Norton & Co.
- Psillos, S., & M.Curd. 2008. *The Routledge Companion to Philosophy of Science*. London ; New York: Routledge.

As **background reference** material students shall use the following:

- Psillos, S. 2007. *Philosophy of Science A-Z*. Edinburgh: Edinburgh University Press.

Further references will be provided in class, related to specific topics.

Lecturer

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