

PHILOSOPHY OF SCIENCE I

SPRING 2021

Class meetings

Friday 10-12.30

Online

Instructor

Siska De Baerdemaeker

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Course description

Science is considered the best tool we have to learn about the way the world around us works. Philosophy of science investigates what scientific claims tell us about the way the world is, as well as how scientists acquire that knowledge and why that knowledge is justified. This course introduces philosophy of science by focusing on seven central topics in contemporary philosophers of science. Each topic will be tied to historical developments in 20th century philosophy of science.

Course goals

At the end of this course, students will have developed the following skills:

- History and philosophy of science
 - Give a brief overview of the history of 20th century philosophy of science
 - Identify and explain different views in central debates in philosophy of science
 - Explain key concepts from philosophy of science
- Philosophical skills
 - Active reading of philosophical texts
 - Argument reconstruction
 - Raising objections to a given philosophical argument
 - Write a brief argumentative essay on a topic in philosophy of science

Requirements

Attendance and participation

Due to the unusual circumstances, the attendance requirement for this class has been waived.

Two short essays

Students will complete two essays for this course; one in the middle of the course, one towards the end of the course. I will distribute prompts for both essays well in advance, together with the grading rubric. The first essay will primarily focus on argument reconstruction, while the second will require original argumentation in context of a debate in philosophy of science by drawing on the literature discussed in class. Each essay should be approx. 1000 – 1500 words.

Readings

Rosenberg, Alex, and Lee McIntyre (2020) *Philosophy of Science: A Contemporary Introduction* (Fourth Edition) New York: London. Pp. 294.

All other readings will be made available online

Tentative course schedule (subject to revision)

Week	Date	Topic	Readings
3	22/1	Introduction A brief history of philosophy of science	Rosenberg & McIntyre– Chapter 1
4	29/1	Explanation	Rosenberg & McIntyre – Chapter 3 Cartwright – “The Truth Doesn’t Explain Much”
5	5/2	Laws of Nature	Rosenberg & McIntyre – Chapter 4 Cartwright – “Do the Laws of Physics State the Facts?”
6	12/2	Causation; Laws of Nature in the Life Sciences	Rosenberg & McIntyre – Chapter 5 Mitchell – “Dimensions of Scientific Law” [Essay Question 1 Distributed]
7	19/2	Interpreting Scientific Theories: The Realism Debate	Rosenberg & McIntyre – Chapter 7 [SKIM] Rosenberg & McIntyre – Chapter 8 Wylie – “Arguments for Scientific Realism: Ascending Spiral”
8	26/2	Confirming Scientific Theories: Induction and Evidence	Rosenberg & McIntyre – Chapter 10: “The Problem of Induction” Rosenberg & McIntyre – Chapter 11 Boyd – “Evidence enriched” [Essay 1 Due]
9	5/3	Science as a Social Endeavour; Feminist Philosophy of Science	Rosenberg & McIntyre – Chapter 12 Rosenberg & McIntyre – Chapter 14: “Scientism, Sexism, and Significant Truths” Okruhlik – “Gender and the Biological Sciences” [Essay Question 2 Distributed]
10	12/3	Values and Science	Douglas – “Inductive Risk and Values in Science” Longino – “Values and Objectivity”
11	19/3	N/A	[Essay 2 Due]

Bibliography:

Week 4:

- Cartwright, Nancy (1983). The Truth Doesn't Explain Much. In: *How the Laws of Physics Lie*. Oxford: Clarendon Press. Pp. 44-53

Week 5:

- Cartwright, Nancy (1983). Do the Laws of Physics State the Facts? In: *How the Laws of Physics Lie*. Oxford: Clarendon Press. Pp. 54-73

Week 6:

- Mitchell, Sandra (2000). Dimensions of Scientific Law. *Philosophy of Science*, 67(2), 242.

Week 7:

- Wylie, Alison (1986). Arguments for Scientific Realism: The Ascending Spiral. *American Philosophical Quarterly*, 23(3), 287.

Week 8:

- Boyd, Nora Mills (2018). Evidence Enriched. *Philosophy of Science*. 85(3): 403-421.

Week 9:

- Okruhlik, Kathleen. "Gender and the Biological Sciences." *Canadian Journal of Philosophy* 24, no. sup1: 21-42

Week 10:

- Longino, Helen E. (1990). Values and Objectivity. In: *Science as social knowledge: values and objectivity in scientific inquiry*. Princeton, N.J.: Princeton Univ. Press. Pp. 62-82
- Douglas, Heather (2000). Inductive Risk and Values in Science. *Philosophy of Science*. 67(4):559-579