

Syllabus: Undergraduate Classes in Philosophy of Science

Instructor: Joao Fabiano

Email: jlafabiano@gmail.com

Office Hours: 11:00-19:00 Monday-Friday

Brief Overview

Throughout the range of this class, students will cover some of the major contributions to the philosophy of science in the last century. These will include from foundational issues such as the problem of induction and demarcation of science to incommensurability and to more recent solutions to incommensurability. Every week, students will be expected to read the main text as well as possible supplementary materials — the first being mandatory and the rest elective. They will write four short essays and a long final paper. Each short essay will be on the subject of the week in which it is handed in, but the final may be focused on any week's subject. Whenever the student elects to write an essay on a week's subject, they will be expected to read all supplementary materials for that week. By end of the course, students will have to exhibit an accurate and adequate knowledge of several of the main contributions to philosophy of science as well as display a reasonable ability to argue and defend claims in a rigorous and structured form.

GRADING:

Essays: Students are expected to write four short essays (approx. 1500 words) in total about any given week's subject to be delivered by the beginning of that week's class.

Class participation: Students will be randomly asked to summarise and defend their essays in class and expected to offer arguments supporting, explaining or counter-arguing other students' essays.

Final Paper: By the end of the term students will deliver a longer and more rigorous essay (approx. 5,000 words) that may or may not be a development of any of their

past shorter essays.

Essays (four in total)= 50%

Class participation=10%

Final paper= 40%

TIMETABLE:

Week 1: The problem of induction and Popper's demarcation criterion

Main: Chapter 1 and 2 of Karl Popper's *The Logic of Scientific Discovery*

Supplement 1: Thornton, Stephen, "Karl Popper, 3. The Problem of Demarcation", *The Stanford Encyclopedia of Philosophy* (Summer 2017 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/sum2017/entries/popper/#ProbDema>

Supplement 2: Chapter 2 of Gillies' *Philosophy of Science in the Twentieth Century*

Week 2: The analytic-synthetic distinction and Quine's refutation

Main: Quine's *Two Dogmas of Empiricism* - First Dogma

Supplement 1: Rocknak, Stefanie, "Willard Van Orman Quine: The Analytic/Synthetic Distinction", *The Internet Encyclopedia of Philosophy*, <http://www.iep.utm.edu/quine-an/>

Supplement 2:

Week 3: Verificationism and Quine's refutation

Main: Quine's *Two Dogmas of Empiricism* - Second Dogma

Supplement 1: Chapter 5, *The Duhem Thesis and the Quine thesis*

Week 4: Is science a rational, truth-seeking enterprise?

Main: Chapter 13 of Thomas Kuhn's *The Structure of Scientific Revolutions*

Supplement 1: Nickles, Thomas, "Scientific Revolutions", *The Stanford Encyclopedia of Philosophy* (Winter 2017 Edition), Edward N. Zalta (ed.), URL = [<https://plato.stanford.edu/archives/win2017/entries/scientific-revolutions/>](https://plato.stanford.edu/archives/win2017/entries/scientific-revolutions/).

Supplement 2: Chapter 6, Hilary Putnam, *The 'Corroboration' of Theories*

Week 5: David Lewis and possible solutions to Kuhn's incommensurability

Main: Lewis, D., 1970. "How to define theoretical terms," *Journal of Philosophy*, 67: 427–446.

Supplement 1: Guide for the paper by Patrick Maher available at:

<http://patrick.maher1.net/318/lectures/lewis2.pdf>

Week 6: Scientific Realism: Worrall's Structural Realism

Main: Worrall, J., 1989. "Structural realism: The best of both worlds?" *Dialectica*, 43: 99–124. Reprinted in D. Papineau (ed.), *The Philosophy of Science*, Oxford: Oxford University Press, pp. 139–165.

Supplement 1: Ladyman, James, "Structural Realism", *The Stanford Encyclopedia of Philosophy* (Winter 2016 Edition), Edward N. Zalta (ed.),

<https://plato.stanford.edu/archives/win2016/entries/structural-realism/>

Week 7: Scientific Realism: Putnam's Internal Realism

Main: First two chapters of Hilary Putnam's book "Realism with a Human Face" (Realism with a Human Face and A Defense of Internal Realism)

Supplement 1: Chakravartty, Anjan, "Scientific Realism", *The Stanford Encyclopedia of Philosophy* (Summer 2017 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/sum2017/entries/scientific-realism/>

Supplement 2: Chapter "Internal Realism" from Ilkka Niiniluoto's book "Critical Scientific Realism"

Week 8: Revision

If you have questions or would like to contact me, feel free to send an email. I will be more likely to respond during weekday afternoons. If you would like to schedule an appointment with me outside of class, let me know two days beforehand. My office hours are from 11am to 7pm.