

Course Summary for “Kant and the Philosophy of Science”

Dr. Erik Curiel

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office hours: by appointment

course website:

<http://strangebeautiful.com/lmu/2014-winter-kant-phil-sci.html>

Winter, 2014–2015

Wednesdays, 14:00–16:00 C.T.

Ludwigstr. 31, 021

1 Course Description

Although Kant is most well known in the broader philosophical world for his works on ethics, metaphysics and epistemology, his views on science have also been influential in the historical development of both of philosophy of science and of science itself, continuing up to the present day. In this course, we will examine Kant’s own views on science and trace his influence through some of his most well known successors, focusing on the question of the role of the *a priori* in science, which naturally leads to consideration of issues regarding the nature of space, time and causation. In the first third of the course, we will focus on understanding Kant’s own works, including selections from *The Critique of Pure Reason*, *Prolegomena to Any Future Metaphysics*, and *Metaphysical Foundations of Natural Science*. In the second third of the course, we will read a selection of historical philosophers and scientists who followed after and were influence by Kant, to see both what they endorsed of Kant’s, what they modified, what they rejected, and why. Among philosophers and scientists to be covered are Riemann, Helmholtz, Peirce, Hertz, and Poincaré. We will focus on questions of In the final third of the course, we will examine Kant’s influence in the Twentieth Century. We will examine, among others, works by Einstein, Russell, Carnap, Reichenbach, Howard Stein, and Michael Friedman.

The course’s website is:

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2 Evaluation

The course is worth 9 ECTS. The grade for the course will be determined as follows:

1. 30%: in-class presentation on topic of student’s choice (starting after we finish the primary material on Kant), with 5 page paper based on presentation to be turned a week later ; I strongly urge students to consult with me before choosing a topic, and while preparing for the presentation.

2. 70%: 12–15 page term paper, due 27 Mar 2015. The paper will be on a subject of the student's choice (including anything on the primary Kant material), except it must be on a topic different from that of the student's presentation; I strongly urge students to consult with me before choosing a topic.

I will be happy to read and comment on rough drafts of the final paper, so long as they are given to me at least two weeks before the due date.

Students wishing to audit the course should consult with me prior to or during the first week of classes.

3 Readings

There are two books students should buy for the course: [Friedman \(2001\)](#), *The Dynamics of Reason*; and [Fraassen \(1980\)](#), *The Scientific Image*. The required texts for the course are available at any good academic bookstore or online book seller, or downloadable directly from the journals in which they were published, *etc.* Many of the required and suggested readings are available online at the course's website, <http://strangebeautiful.com/lmu/2014-winter-kant-phil-sci.html>, though they may not be listed as such in the bibliography.

4 Tentative Schedule

KANT

Week 1 (Oct. 08) Introduction, historical background

Week 2 (Oct. 15) Newton's achievements as background and foundation for Kant's mature thought

Week 3 (Oct. 22) *Critique of Pure Reason*: the analytic and synthetic, the *a priori* and *a posteriori*, the pure forms of perception, the pure categories of the understanding, judgments of experience

Week 4 (Oct. 29) *Prolegomena*: How is natural science of the sort Newton achieved possible?

Week 5 (Nov. 05) *Metaphysical Foundations*: Kant's own framework for Newtonian natural science

THE NINETEENTH CENTURY

Week 6 (Nov. 12) Riemann, Helmholtz: mathematical and physical geometry after Kant

Week 8 (Nov. 19) Hertz, Poincaré: Neo-Kantian mechanics; geometrical conventionalism

Week 7 (Nov. 26) NO SEMINAR

The TWENTIETH CENTURY

Week 9 (Dec. 03) Einstein: the empirical and theoretical grounds for physical geometry as a basis for physics

Weeks 10–11 (Dec. 10–17) Reichenbach: the constitutive and the relative *a priori* in scientific knowledge

Week 12 (Dec. 24) NO SEMINAR

Week 13 (Jan. 07) Carnap: observational versus theoretical concepts and terms; the analytic, the synthetic and the *a priori* in linguistic frameworks

Week 14–16 (Jan. 14–28) Neo-Kantians and Respondents: Mary Domski, Michael Friedman, Michela Massimi, Flavia Padovani, Howard Stein, *et al.*, on all the topics covered so far

TERM PAPER DUE 27 Mar 2015

References

Fraassen, B. v. (1980). *The Scientific Image*. Oxford: Oxford University Press.

Friedman, M. (2001). *The Dynamics of Reason*. Stanford, CA: CSLI Publications. Delivered as the 1999 Kant Lectures at Stanford University.