

PHILOSOPHY 124: PHILOSOPHY OF SCIENCE – HISTORICAL  
MW 2-3:50, Dodd 78

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Office Hours: M 4-5, T 11-12  
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*Course Description*

One topic of perennial concern in philosophy of science is to clarify and assess the scientific method, if any such method exists. In this course we will consider how a number of philosophers have approached this question from the seventeenth century to the early twentieth century, with an emphasis on what their distinctive approaches reveal regarding their philosophical and scientific context. One central concern will be to understand Hume's problem of induction and various responses to it. We will also consider the holism and conventionalism proposed at the end of the nineteenth century by Duhem and Poincaré.

*Evaluation*

1. Papers (25% for first paper and 40% for second): I will ask you to write two papers (4-5 pages double-spaced, in a reasonable font for the first paper, 7-8 pages for second paper). Topics and additional guidelines will be distributed well in advance of the due dates. The paper should clearly state and argue for a thesis; a mere summary of existing literature or lecture notes will not be rewarded. Students are encouraged to consult with me while preparing the paper.
2. Final exam (35 %). I will distribute a review sheet and provide details regarding the format of the final before the exam.

*Readings*

Barry Gower, *Scientific Method*. Routledge, 1997.

*Course Reader*: Collection of articles listed below, available at Course Reader Material, 1137 Westwood Blvd.

*Ecampus Website*: several *required* readings (listed below) are posted at the website.

## TENTATIVE SCHEDULE

Date	Topic	Assigned Reading
January 9	Introduction and Overview	
11	Hume's Problem of Induction	W 1
16	<b>Holiday</b>	
18	<i>continued</i>	W 2
23	Hume's Context: Newtonian Science	CR 1; G 2,4
25	<i>continued</i>	
30	Probability as the Guide to Life	G 5; CR 2 (selections)
Feb. 1	<i>continued</i>	W 3
6	19 <sup>th</sup> century Theories of Method	G 6
8	Mill - Whewell Debate	CR 3,4
13	<i>continued</i>	W 4
15	Popper and Reichenbach on Induction	G 10; CR 2 (selections)
20	<b>Holiday</b>	
22	<i>continued</i>	
27	Conventionalism and Holism	G 7
March 1	Poincaré's Conventionalism	CR 5
6	<i>continued</i>	
8	Duhem's Conventionalism and Holism	CR 6
13	<i>continued</i>	
15	Overview and Conclusion	

## ASSIGNMENTS

January 30	First Paper Due
March 8	Second Paper Due
March 23	Final Exam: 3:00 - 6:00

*Note:* G refers to chapters in Gower, *Scientific Method*; CR refers to the articles in the course reader, listed below; W refers to required reading posted on the website, also listed below.

*Course Webpage:* Check the course webpage for regular updates on the schedule and other class announcements. Handouts and other materials distributed in class will be posted on the webpage, along with supplemental readings and links.

COURSE READER

- CR 1: Selections from Newton's *Philosophical Writings*, ed. by Janiak. *Principia Mathematica*: pp. 40-59, 70-93; correspondence with Cotes: 118-122; book review of *Commercium*: 123-126.
- CR 2: "Confirmation of Scientific Hypotheses," J. Earman and W. Salmon, in *Introduction to the Philosophy of Science*, pp. 42-103.
- CR 3: Selections from *John Stuart Mill's Philosophy of Scientific Method*, ed. by E. Nagel. On Induction: pp. 170-186; Mill's Methods: pp. 208-238.
- CR 4: Selections from *William Whewell's Theory of Scientific Method*, ed. by R. Butts. *Novum Organum Renovatum*: pp. 149-161; Mr. Mill's Logic: 265-308; Newton: pp. 322-337.
- CR 5: Selections from Poincaré, *Science and Hypothesis*.
- CR 6: Selections from Duhem, *Aim and Structure of Physical Theory*.

ARTICLES POSTED ON THE WEBSITE

- W 1: David Hume, *An Inquiry Concerning Human Understanding*, edited by Charles Hendel, section IV, pp. 40-53.
- W 2: Colin Howson, *Hume's Problem*, Chapter 1: "Hume's Argument," pp. 6-21.
- W 3: Selections from *The Emergence of Probability*, by Ian Hacking.
- W 4: Laura Snyder, "The Mill-Whewell Debate: Much Ado About Induction", *Perspectives on Science* 5 (1997).

TEXTS ON RESERVE

- Cohen and Smith, *Cambridge Companion to Newton*.  
Howson, *Hume's Problem*  
Gower, *Scientific Method: An Historical and Philosophical Introduction*.  
Losee, *An Historical Introduction to the Philosophy of Science*.