

PHILOSOPHY 119: 17th CENTURY NATURAL PHILOSOPHY
MW 10-11:50, Public Policy 1337

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Course Description

This course offers a critical study of the development of natural philosophy in the work of three prominent 17th century figures: Descartes, Leibniz, and Newton. We will also briefly consider Kant's attempt to resolve the tension between Newton and Leibniz's views. We will focus on issues falling at the intersection between traditional philosophical concerns and the new science of motion and dynamics. In particular, we will discuss the views of these authors regarding matter, motion, forces, and the laws of nature. We will also consider their epistemological views, including how experimental or observational evidence can or should be brought to bear on determining the nature of matter and forces.

Evaluation

1. Papers (60 % total; 20 % each): I will ask you to write three short papers (4-5 pages typed, double-spaced, in a reasonable font). Topics and additional guidelines will be distributed well in advance of the due dates. These papers 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 (40 %). I will distribute a review sheet and provide details regarding the format of the final before the exam.

Required Texts

The primary source materials are available in a wide variety of different translations and editions, any of which are acceptable (although slightly less convenient).

Leibniz: Philosophical Essays, edited by R. Ariew and D. Garber.

Newton: Philosophical Writings, edited by A. Janiak.

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

Website: several *required* readings will be posted on the ecampus website, along with supplementary materials and useful links.

TENTATIVE SCHEDULE

Date	Topic	Assigned Reading
January 9	Introduction and Overview	
11	Descartes' Project	CR 1, 3-21
16	Holiday	
18	Body and Extension, Laws of Motion	CR 1, 16-24; CR 2, 39-58
23	Leibniz <i>contra</i> Descartes	AG 240-256; CR 4, 309-316
25	Leibniz on Substance	AG 35-90 (selections), CR 4 (selections)
30	<i>continued</i>	
Feb. 1	Leibnizian Dynamics	AG 117-138; CR 4 (selections)
6	New System and Monadology	AG 138-145, 206-225
8	Newton <i>contra</i> Descartes	CR 5
13	<i>Principia Mathematica</i>	N 226-243
15	<i>continued</i>	N 116-119, 159-161, 253-274
20	Holiday	
22	<i>continued</i>	CR 6
27	Newton's Metaphysics	CR 7
March 1	Matter Theory	N 39-55, 72-96
6	Newton versus Leibniz	LCC, AG 309-320, N 161-164
8	Kant's <i>Physical Monadology</i>	
13	<i>continued</i>	
15	Overview and Conclusion	

ASSIGNMENTS

Jan. 25	1 st Paper Due
Feb. 22	2 nd Paper Due
Mar. 8	3 rd Paper Due
March 23	Final Exam: 8:00 - 11:00

Note: CR refers to the articles in the course reader, listed below (page numbers refer to pages of the articles themselves, not the course reader page numbers). AG = *Philosophical Essays*, edited by Ariew and Garber, LCC = *Leibniz Clarke Correspondence*, N = *Newton*).

Course Webpage: I will adjust this schedule and the reading assignments as the quarter progresses. Check the course webpage for regular updates on the schedule and other class announcements. Any handouts or other materials distributed in class will be posted on the webpage, along with supplemental readings and links to other useful websites.

COURSE READER CONTENTS

1. Selections from the *Principles of Philosophy*, Descartes, translated by Miller and Miller.
2. “Descartes’ Physics,” by Dan Garber. In the *Cambridge Companion to Descartes*, ed. by John Cottingham, pp. 286-334.
3. “Leibniz: Physics and Philosophy,” by Dan Garber. In the *Cambridge Companion to Leibniz*, ed. by N. Jolley, pp. 270-352.
4. “Newton’s Metaphysics,” by Howard Stein. In the *Cambridge Companion to Newton*, pp. 256-307.
5. “Physical Monadology,” Immanuel Kant. In *Theoretical Philosophy: 1755-1770* of the Cambridge edition of Kant, pp. 53-66.

Texts on Reserve

Garber, *Descartes’ Metaphysical Physics*.

Gaukroger, *Descartes System of Natural Philosophy*.

Adams, *Leibniz: Determinist, Theist, Idealist*.

Mates, *The Philosophy of Leibniz*.

Jolley, *Cambridge Companion to Leibniz*.

Newton, *Principia Mathematica*, trans. by Cohen and Whitman.

Densmore, *Newton’s Principia: The Central Argument*.

De Gandt, *Force and Geometry in Newton’s Principia*.

Cohen and Smith, *Cambridge Companion to Newton*.