Phi 333 Philosophy of Science
Hanover College, Fall 2012
12:00-12:50pm, MWF, CLA 315

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Fall 2012 Office Hours: 9-10 MTWF, and by appointment
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Course Description
The philosophy of science concerns itself with philosophical questions about science: What demarcates science from other sorts of human activity (esp. activity that *poses* as science but isn't)? What makes an explanation a *scientific* explanation? How do scientific theories get confirmed or disconfirmed by evidence? How are the various sciences *related* to each other? In this course, we will study theories attempting to answer these and other questions, arguments for those answers, arguments against those answers, problems with both kinds of argument, and so on. By the end of this course, you should be able to think and write about central issues in the philosophy of science in an informed and intelligent way. Writing assignments will help you gain the required mastery of the course material to further this end.

Text
Martin Curd & J.A. Cover. *Philosophy of science: the central issues*. (W.W. Norton, 1998).

Course Requirements & Grading
This semester, students will write eight one-page argument analyses on the reading assignments, write and present one major thesis-defense project, attend and participate regularly in class discussions, and take a comprehensive final exam. The eight short papers are due in class on Monday of the week the reading is assigned. (These readings are ∗'d on the reading schedule below.) The thesis-defense paper project has a sequence of due dates elaborated on a separate handout. The final exam will be scheduled the week of 10 Dec, specifics to be announced. NB: Late work will not be graded. Detailed assignments and study questions will follow. The below grading scheme presupposes regular attendance and class participation; lack thereof will result in a lowered grade.

Point Distributions

8 short papers, 25pts ea	200
Thesis-defense paper	150
Final exam	100
Total:	**450**

Letter Grade Distributions

A	420-450	B+	390-404	C+	345-359	D+	300-314
		B	375-389	C	330-344	D	285-299
A-	405-419	B-	360-374	C-	315-329	D-	270-284
						F	0-269

Special Information
- Americans with Disabilities Act: If you have any special needs as addressed by the Americans with Disabilities Act and need course materials or tests in alternative formats, notify me immediately. All reasonable efforts will be made to accommodate your special needs.
- Academic Dishonesty: Academic honesty is essential to the intellectual life of the College. Thus, academic dishonesty, such as cheating and plagiarism, is a basis for disciplinary action. No suspected case of academic dishonesty will be taken lightly; all will be handled in accordance with the student conduct code.
- Dropping this course: The deadline for discretionary withdrawal from any class is 5:00pm, Tues, 30 Oct.
- Degree Requirements: This course is an upper-level elective for the Philosophy Major or Minor.

Reading Schedule

Date	Readings	
I. WHAT IS SCIENCE?		
3 Sep	Ch. 1 Intro (1-2) Popper, "Science: conjectures and refutations" (3-10) Commentary, section 1.1 (63-66)	[14]
10 Sep	∗Kuhn, "Logic of discovery or psychology of research" (11-19) Lakatos, "Science and pseudoscience" (20-26) Commentary, sections 1.2, 1.3 (66-72)	[23]
17 Sep	Ruse, "Creation-science is not science" (38-47) Laudan, "Commentary: Science at the bar – causes for concern" (48-53) Ruse, "Response to the commentary: *pro judice*" (54-61) Commentary, section 1.5 (74-77)	[28]
II. WHAT IS A SCIENTIFIC EXPLANATION?		
24 Sep	Ch. 6 Intro (675-677) ∗Hempel, "Two basic types of scientific explanation" (685-695) Commentary, section 6.1 (767-773)	[21]
1 Oct	∗Ruben, "Arguments, laws, and explanations" (720-745) Commentary, section 6.4, 6.5 (784-790)	[33]
III. THE PROBLEM OF INDUCTION AND EMPIRICAL EVIDENCE		
8 Oct	Ch. 4 Intro (409-411) ∗Popper, "The problem of induction" (426-432) Commentary, section 4.2 (505-508)	[14]
15 Oct Fall Break 10/15-10/16	∗Hempel, "Criteria of confirmation and acceptability" (445-459) Commentary, section 4.4 (510-525)	[21]
22 Oct	Ch. 5 Intro (549-550) Commentary, section 5.1 (627-638): Bayesian confirmation	[14]
29 Oct	∗Salmon, "Rationality and objectivity in science" (551-583) Commentary, section 5.2 (638-646)	[42]
IV. THE ONE WORLD AND THE MANY SCIENCES		
5 Nov	Ch. 8 Intro (903-904) ∗Nagel, "Issues in the logic of reductive explanation" (905-921) Commentary, section 8.1 (1005-1011)	[24]
12 Nov	*Fodor, "Special sciences (or, the disunity of science as a working hypotheis)" http://www.jstor.org/stable/20114958	[19]
19 Nov TG Break 11/21-11/23	Bates, "Reductionism as historical and interpretive science"	[20]
V. ARE SCIENTIFIC THEORIES (EVEN APPROXIMATELY) TRUE?		
26 Nov	Ch. 9 Intro (1049-1051) Laudan, "A confutation of convergent realism" (1114-1135) Commentary, section 9.6 (1246-1253)	[23]
VI. STUDENT PRESENTATIONS AND FINAL EXAM		
3 Dec	Thesis-Defense Project Presentations	
10 Dec	Final Exam week	

NB: The reading schedule lists each week of the semester by Monday's date. Readings cover the entire week. This schedule is subject to change.