Understanding Science

Philosophy 218, Spring 2020 TuTh 11:45–1:05 HU 132

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Texts: All course readings are available on Blackboard.
I strongly encourage you to print the readings, to read actively, and to mark them up.

This course is an introduction to some issues in the philosophy of science, including the nature of scientific inference and knowledge. We will also consider the relationship between science and society. Some questions we'll consider include:

- What kind of activity is science?
- What sort of social organization makes for the most productive science?
- Should science set its own agenda, or should it be guided by our social aspirations?

Requirements and grading:

12%	reading response papers
8%	short papers
25%	first midterm exam
25%	second midterm exam
30%	final exam

Class attendance and participation: You should come to class and participate in discussion, but the class is large enough that I won't check for this every day. Instead, participation in class activities and discussion will add to your grade, up to two-thirds of a letter grade. For example, a B could become an A–.

Reading response papers: Students will be responsible for writing five reading response papers during the term. Each should be about one typed page.

- A reading response should provide a critical summary. You should try to state the **central thesis** of the reading and explain briefly what the author is trying to do.
- As yourself: What **reasons** does the author give for believing their thesis? Why do they think it matters?
- A reading response paper should *not* mention everything from the reading, but should instead identify the key issue.

These may be written for any five readings, but must be turned in *before* we have discussed the readings in class.

Short papers: Students will be responsible for writing two short papers (about 3 pages or 750 words) on assigned topics. They will be due February 27 and April 14.

Exams: There will be three exams. The final exam will be cumulative.

Academic honesty: Cheating will not be tolerated.

Absences: Students who will need to miss exam or due dates for foreseeable reasons should discuss them with the professor at the beginning of the term. If an emergency results in absence, the student should contact the professor as soon as possible.

Schedule of topics

This is a provisional and approximate schedule. I have indicated which readings we will discuss in each week, but even this might be nudged one way or another. I will always announce in class what we will be doing at the next meeting. In any case, exam dates and due dates will not change.

Week 1 jan 23
Introduction

Week 2 jan 28, 30
How should you decide what to believe? [read Peirce]

Week 3 feb 4, 6
Kinds of inference [read notes on inference]

Week 4 feb 11, 13
Demarcation [read Laudan]
Norms of science [read Merton]

Week 5 feb 18, 20
Scientific expertise [read Collins+Pinch, on AIDS]

Week 6 feb 25, 27
FIRST EXAM feb 25
The analogy between theories and maps [no reading]
SHORT PAPER #1 due feb 27

Week 7 mar 3, 5 Observation and experiment [read Pinch, on externality]
Scientific significance [read Kitcher]

Week 8 10, 12 mar
Science and values [read Douglas ch 5]

Spring break!

Week 9 mar 24, 26
Values and objectivity [read Douglas ch 6]
Values and policy [read Douglas ch 7]

Week 10 mar 31, apr 2
The value of free enquiry [read Mill]

Week 11 apr 7, 9
continued
SECOND EXAM apr 9

Week 12 apr 14, 16
SHORT PAPER DUE apr 14
Case study: genetics and IQ [read Gould]

Week 13 apr 21, 23
Women in science [read on women in science]
The invisibility of women in science [read Oreskes]

Week 14 apr 28, 30
UALBANY SHOWCASE day apr 28
The limits of algorithms [read on algorithms]

Week 15 may 5
Conclusion

FINAL EXAM W may 13 8:00am–10:00am